

(No Model.)

2 Sheets—Sheet 1.

A. J. MOXHAM.

METHOD OF SECURING GIRDER RAILS IN TRACKS.

No. 435,704.

Patented Sept. 2, 1890.

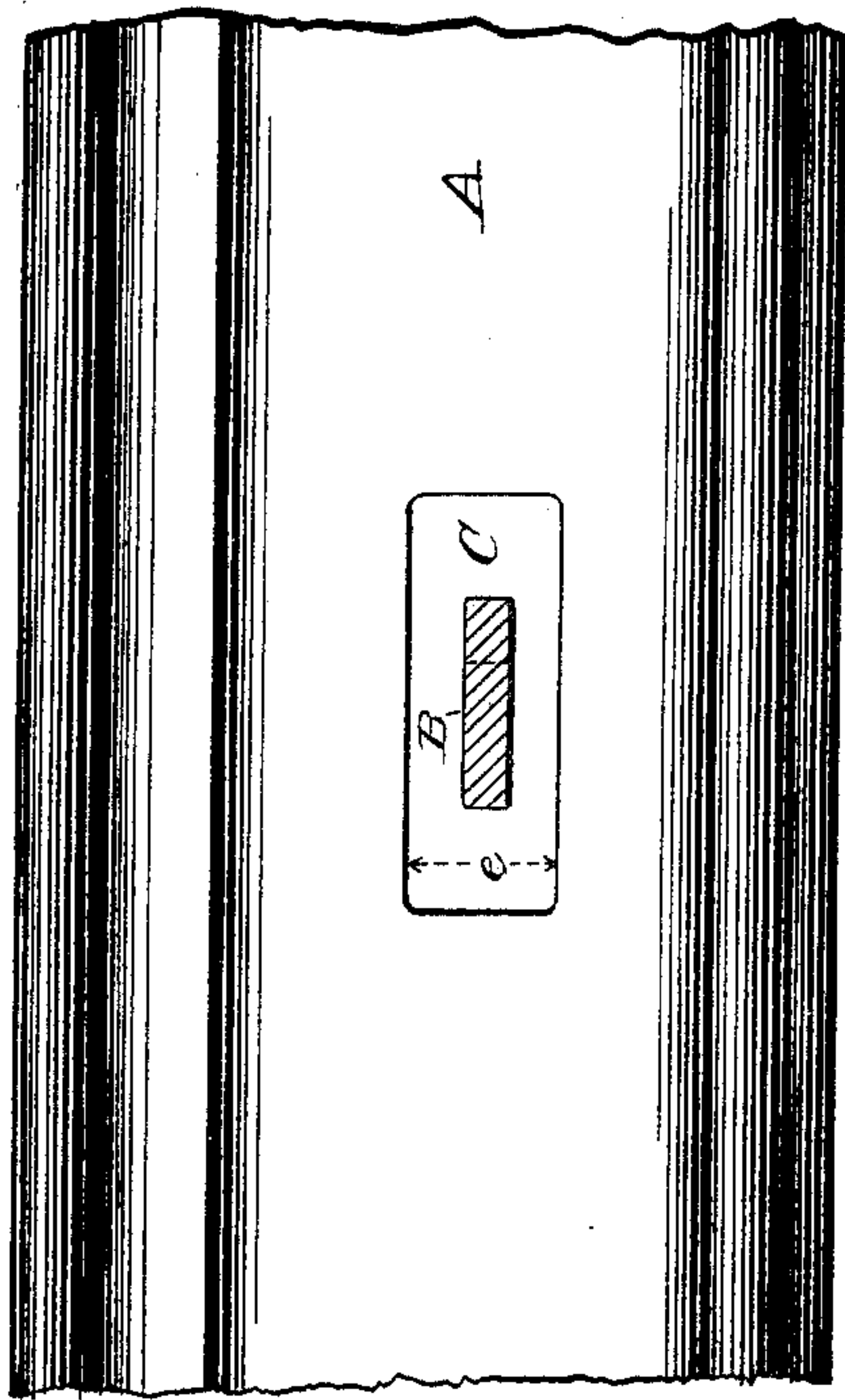


Fig. 1

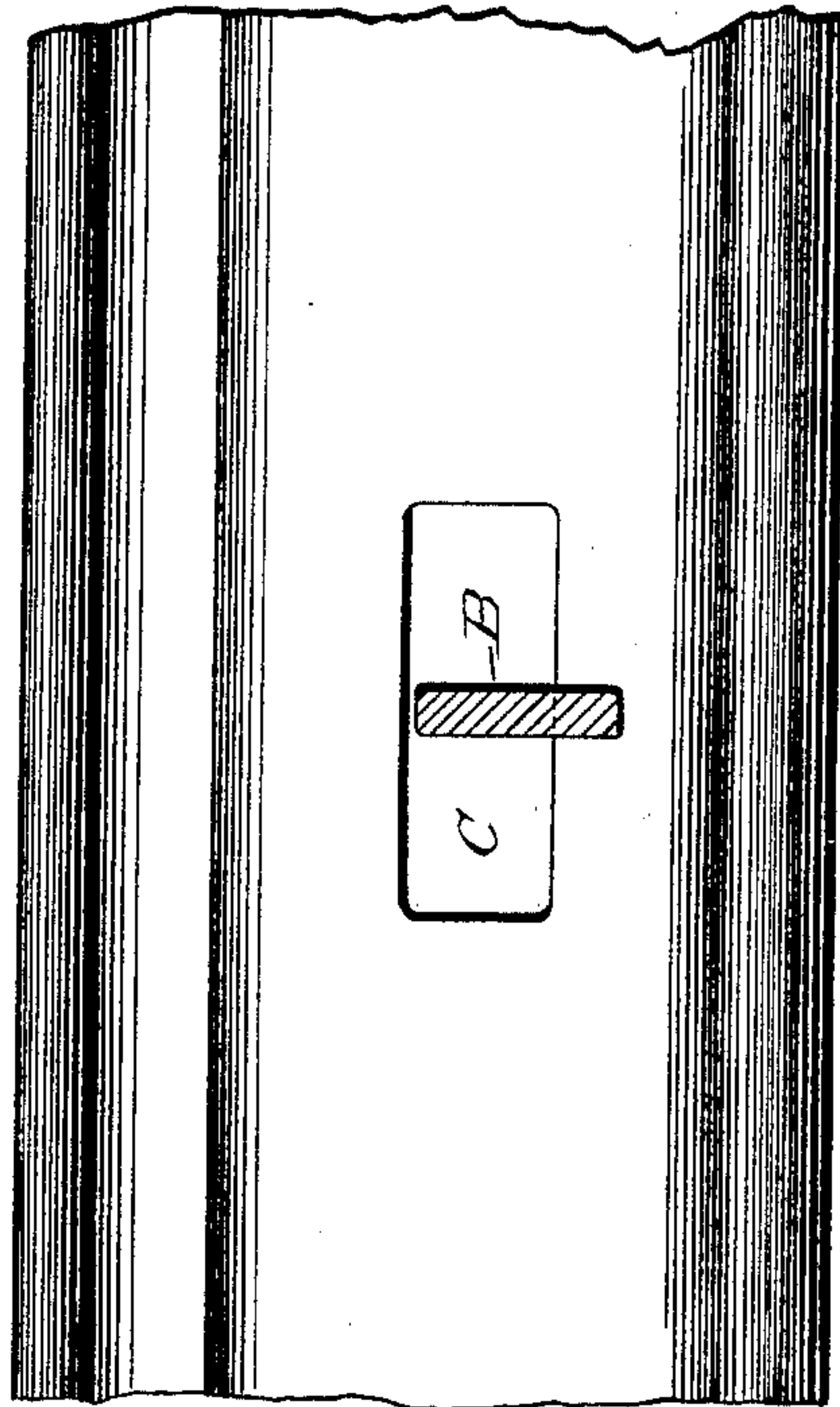


Fig. 2

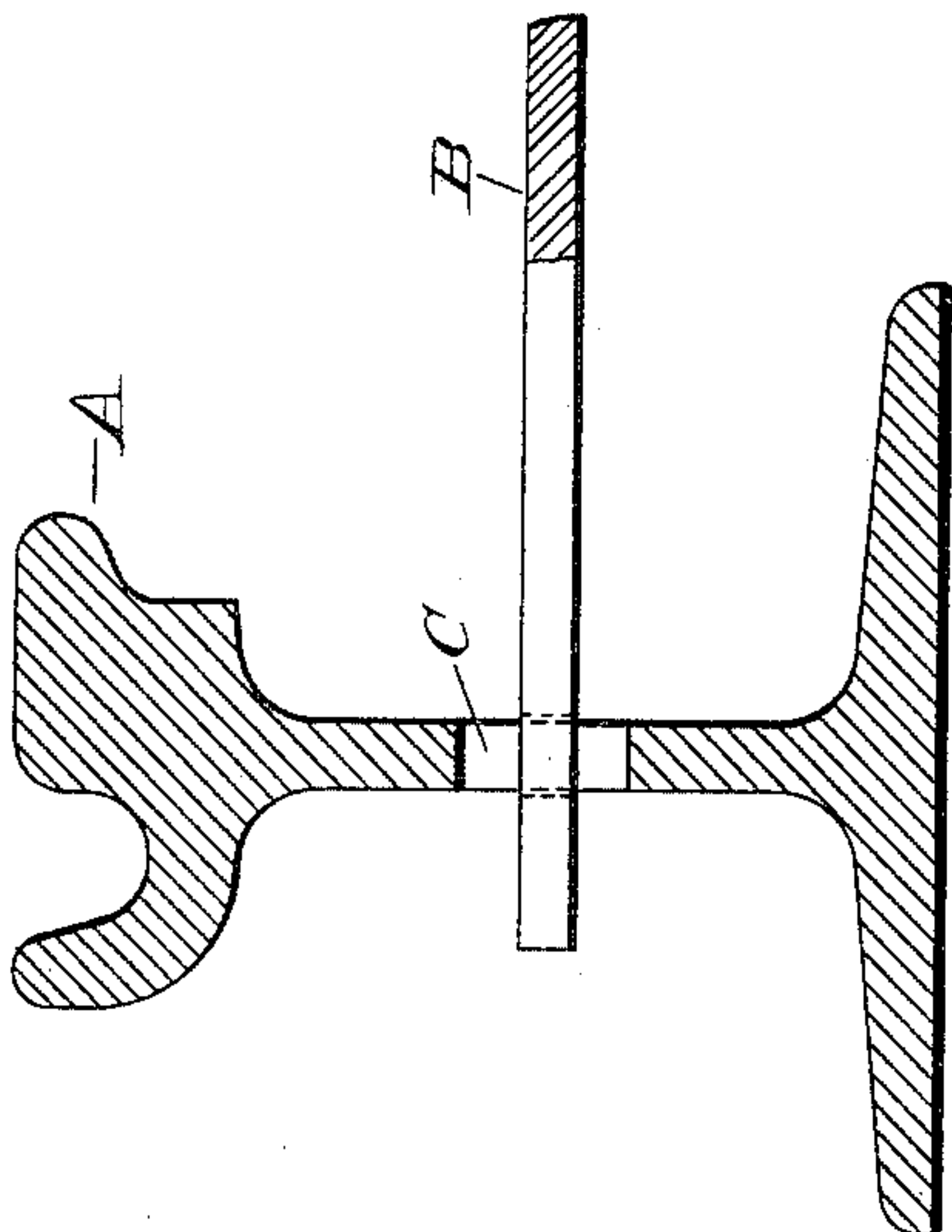


Fig. 4

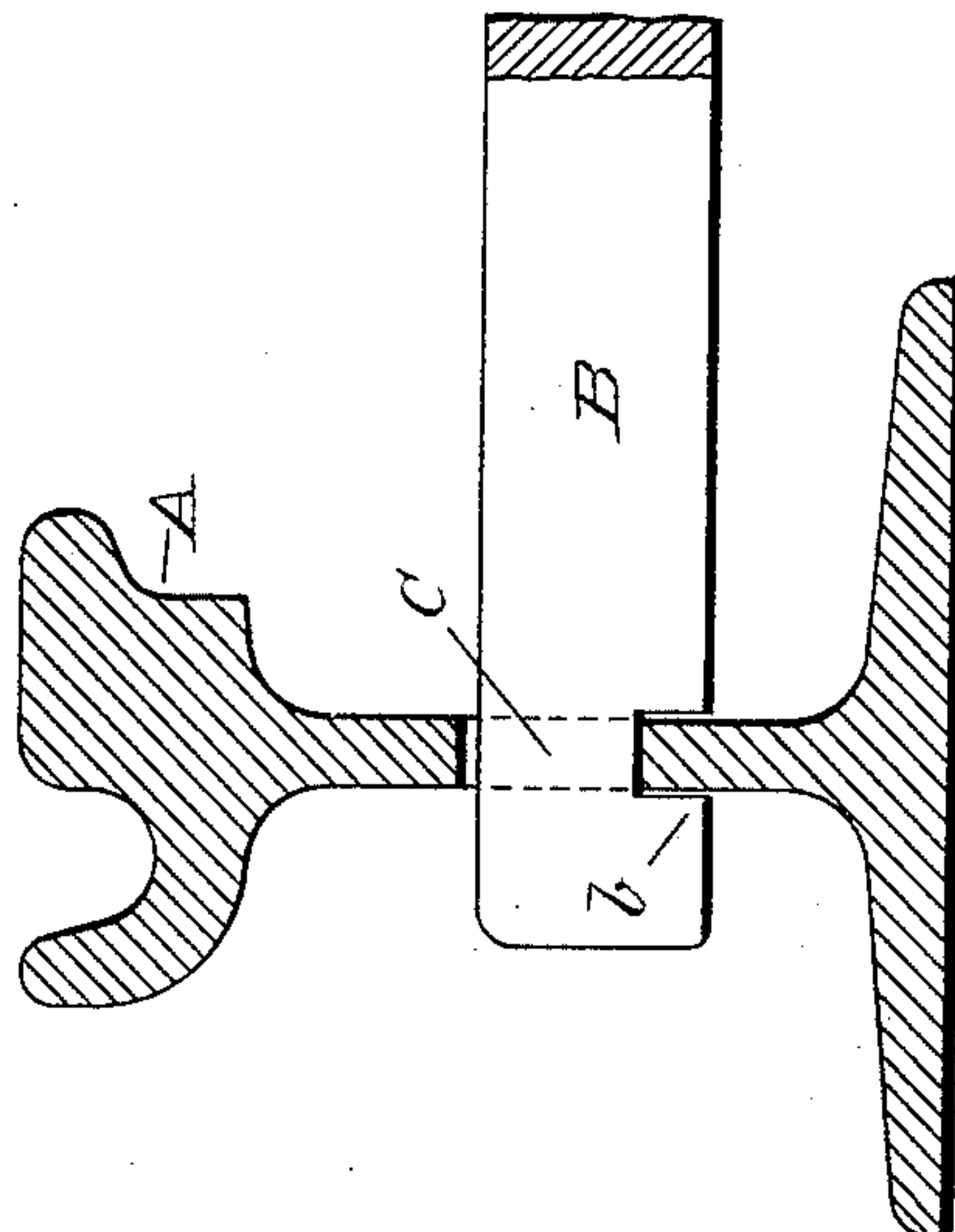


Fig. 5

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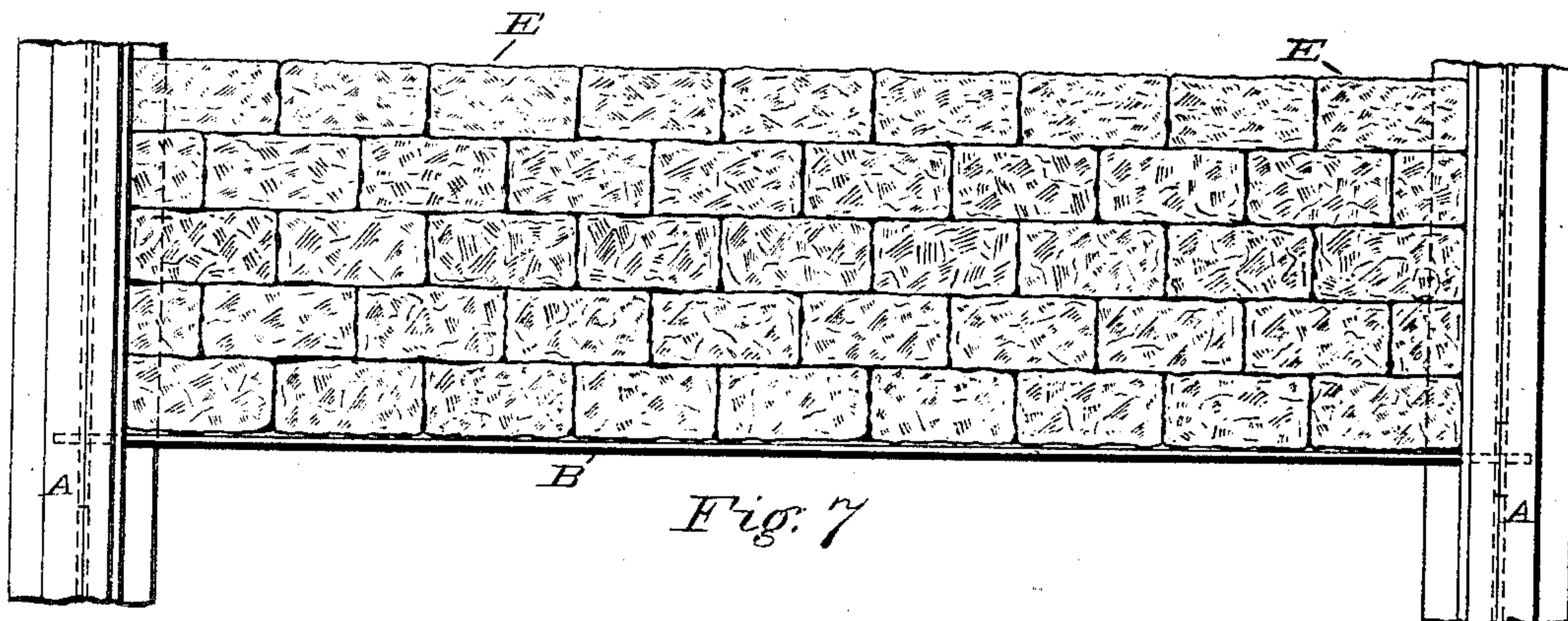
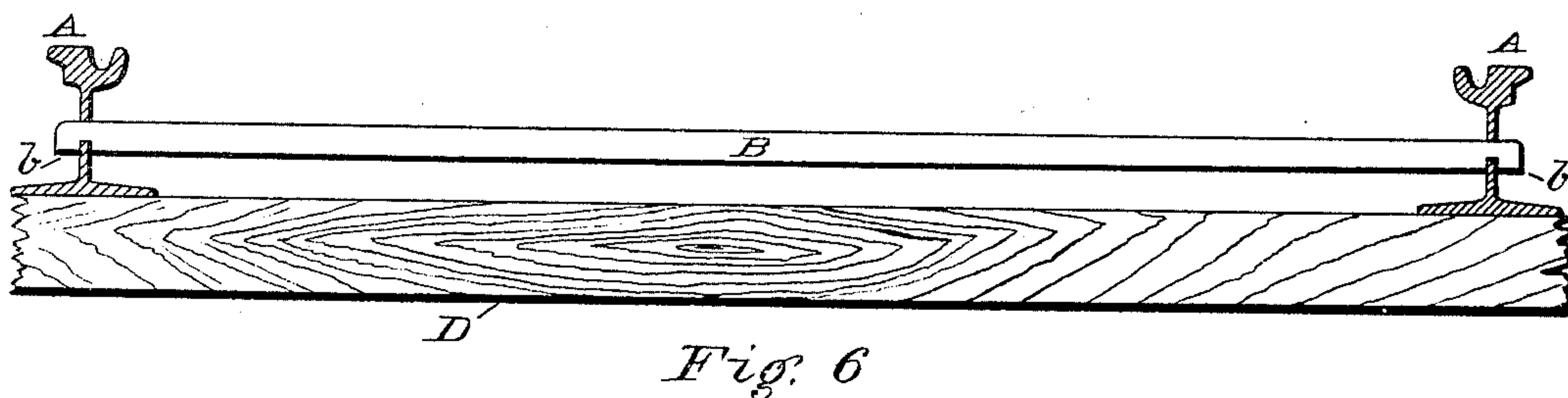
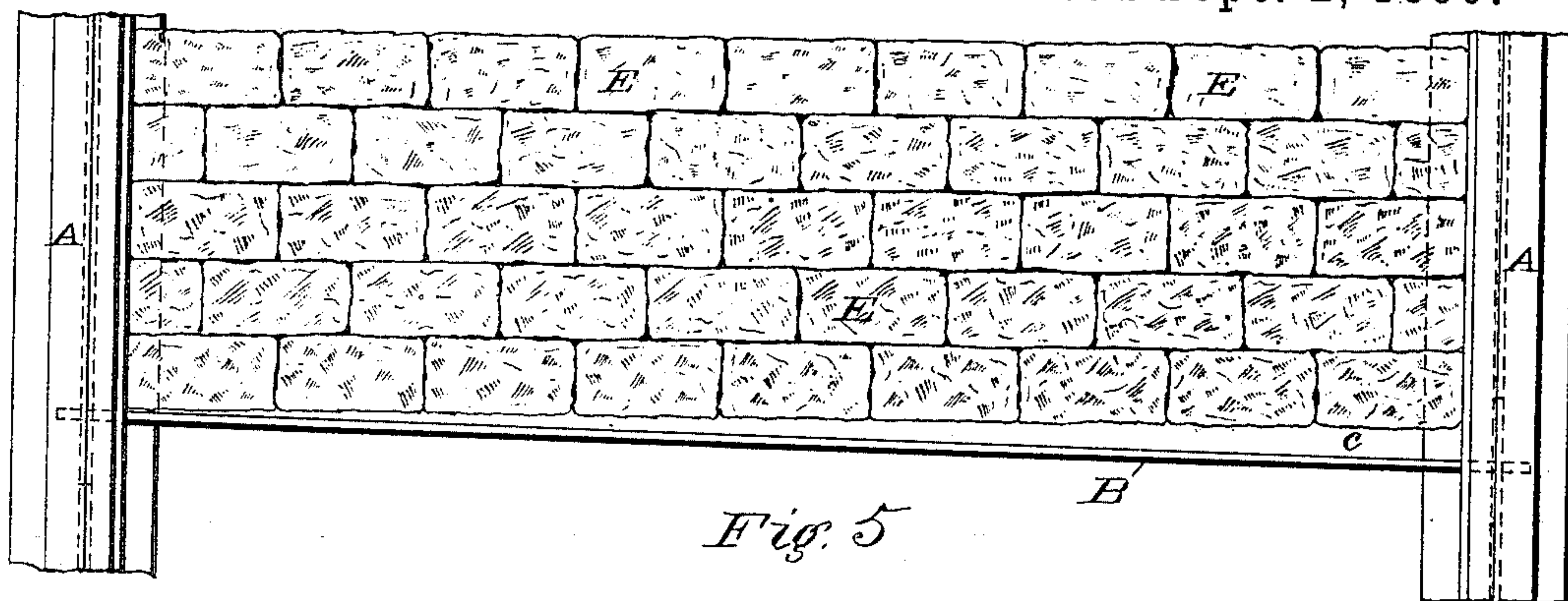
2 Sheets—Sheet 2.

A. J. MOXHAM.

METHOD OF SECURING GIRDER RAILS IN TRACKS.

No. 435,704.

Patented Sept. 2, 1890.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

ARTHUR J. MOXHAM, OF JOHNSTOWN, PENNSYLVANIA.

## METHOD OF SECURING GIRDER-RAILS IN TRACKS.

SPECIFICATION forming part of Letters Patent No. 435,704, dated September 2, 1890.

Application filed September 15, 1888. Serial No. 285,546. (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 Means for Securing Girder-Rails in Tracks, which invention is fully set forth and illustrated in the following specification and accompanying drawings.

The object of this invention is to provide a tie-rod for the rails of street-railroads, adjustable to suit the ordinary irregularities both of paving and track-laying.

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

In the accompanying drawings, Figure 1 illustrates a broken side elevation of a girder-rail, showing a slot in the web of the rail and a sectional end view of a tie-rod flatwise as entered into said slot. Fig. 2 is a view similar to that shown in Fig. 1, except that the tie-rod is shown turned edgewise after entry into the slot in the web of the rail. Fig. 3 is an end view of Fig. 2, showing the rail in cross-section and the tie-rod in side elevation with its hook end engaged in and locked over the edge of the slot in the web of the rail. Fig. 4 is a view similar to that shown in Fig. 3, except that the tie-rod is shown on edge instead of in side elevation. Fig. 5 shows in plan a section of street-bed and track, the bed paved with blocks and the track-rails tied together by a tie-rod, said tie-rod not being yet adjusted. Fig. 6 shows a cross-tie having the track-rails, shown in cross-section, mounted thereon and tied together by a tie-rod. Fig. 7 is a view in plan similar to Fig. 5 with the tie-rod adjusted.

In said figures the several parts are indicated by letters of reference as follows:

The letter A indicates a girder-rail provided with a vertical web and of well-known head and foot, the forms of head and foot being immaterial to this invention.

B indicates the adjustable tie-rod, and b its hook ends, formed by slotting out a portion of its depth near said ends.

C indicates a slot in the web of the rail A, D a cross-tie, and E the street-paving blocks.

From the above description, by reference to the drawings, the invention can now be

readily understood. In particular, referring to Figs. 5 and 7, it will be observed that in the former figure the cross-courses of paving E are not parallel to the tie-rod B, the angular space between the course next to the rod and the rod being indicated by the letter c. This want of parallelism between courses of blocks and the tie-rods is of frequent and troublesome occurrence, and must be endured so long as the tie-rods cannot be adjusted so as to lie, if desired, somewhat diagonally across the track. With this provision, which is secured by means of the slot C in the web of the rail and the hook end b of the tie-rod, it can readily be seen that every tie-rod can be firmly supported in the joint between any two courses of stone, and no necessity can arise for filling in such angular spaces as are indicated in Fig. 5 at c, where, by reason of the non-adjustability of the rods, such spaces become unavoidable. Such spaces have heretofore been filled by a distortion of the last few courses of the paving nearest the rods.

In laying the track the tie-rods B are first entered flatwise into the slots C in the webs of the rails and then turned edgewise, so that their hook ends b will lock over the bottom edges of said slots, as clearly shown in the drawings. Then by adjusting the tie-rods to lie either at right angles to the rails or sufficiently on the diagonal to accommodate the courses of stone or other paving-blocks everything is brought into proper line and no disturbance occurs to require irregularity of courses to fill up angular spaces between blocks and rods, for no such spaces can exist.

Another important consideration is the adjustability of the rod at a true right angle to the track-rail. If the tie-rods are located at fixed and non-adjustable points, the series of paving-blocks between two tie-rods, together with intervening joint-spaces, must fill the spaces between the rods. This is done in practice by a selection of paving-blocks; but with a tie-rod, as shown herein, the paving can go on without regard to the tie-rod, and the rod be moved either to or from the last paving-course. The adjustability being in the rod, and not in the paving, no special selection of paving-blocks is required. It will be ob-

served that the slots in the webs of the rails are so elongated as to provide for ample adjustability of rods.

Any suitable form of slotted tie-rod can be  
5 used, the essence of the invention being the scope of the adjustability afforded by the elongated slot in the web of the rail to the tie-rod used.

Having thus described my said improvement, as of my invention I claim— 10

A slotted tie-rod, as B, in combination with transverse slotted rails.

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