

F. W. WILHARM.
RAIL JOINT.

APPLICATION FILED SEPT. 22, 1903.

NO MODEL.

Fig. 1.

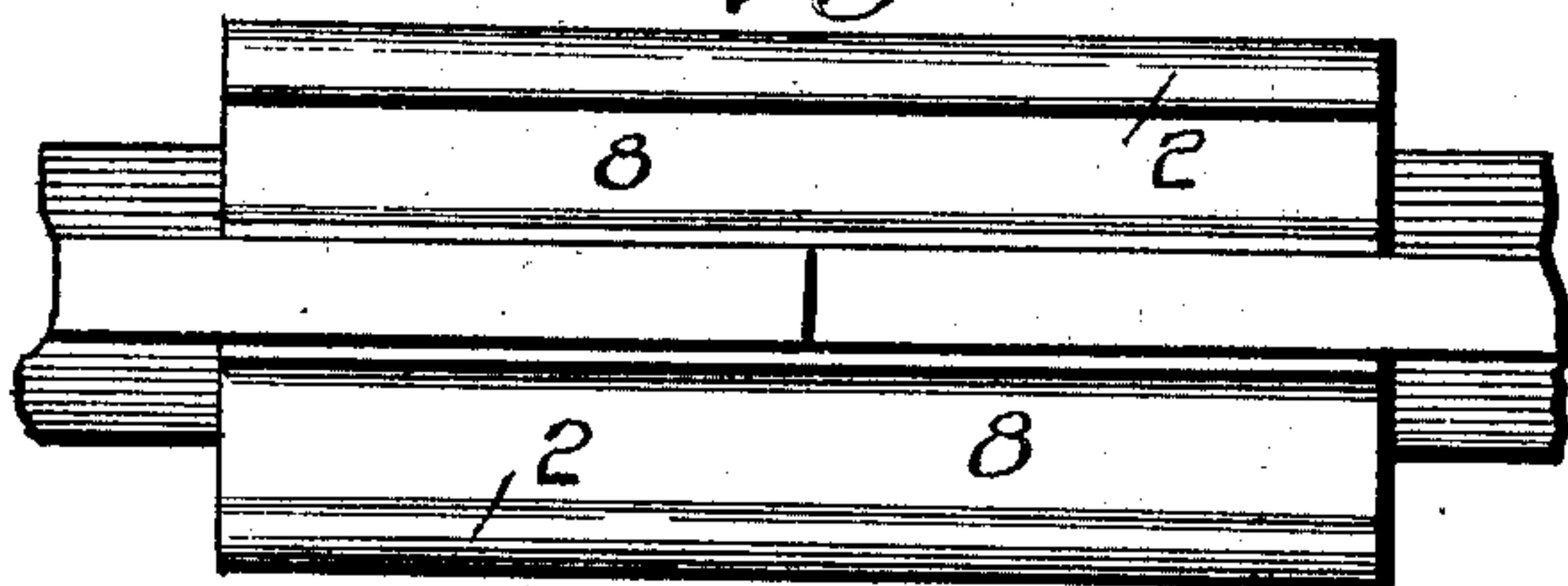


Fig. 2.

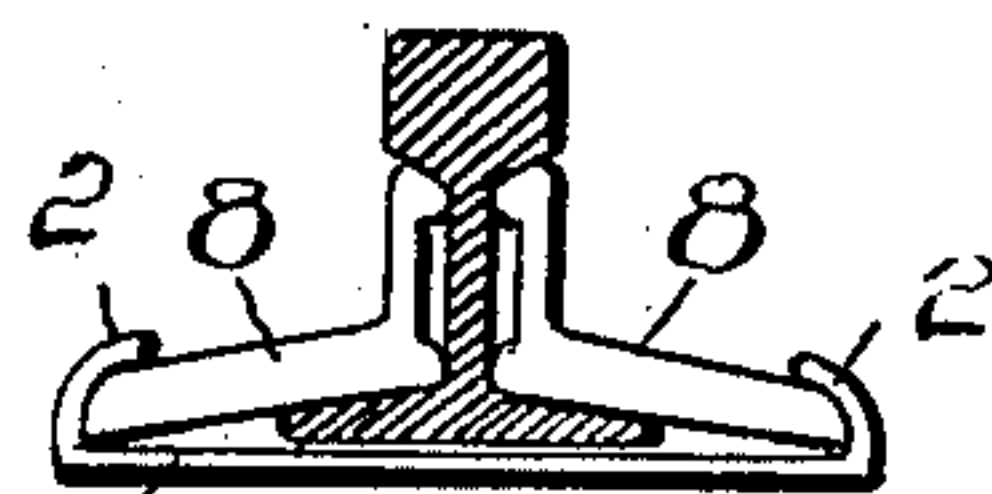


Fig. 3.

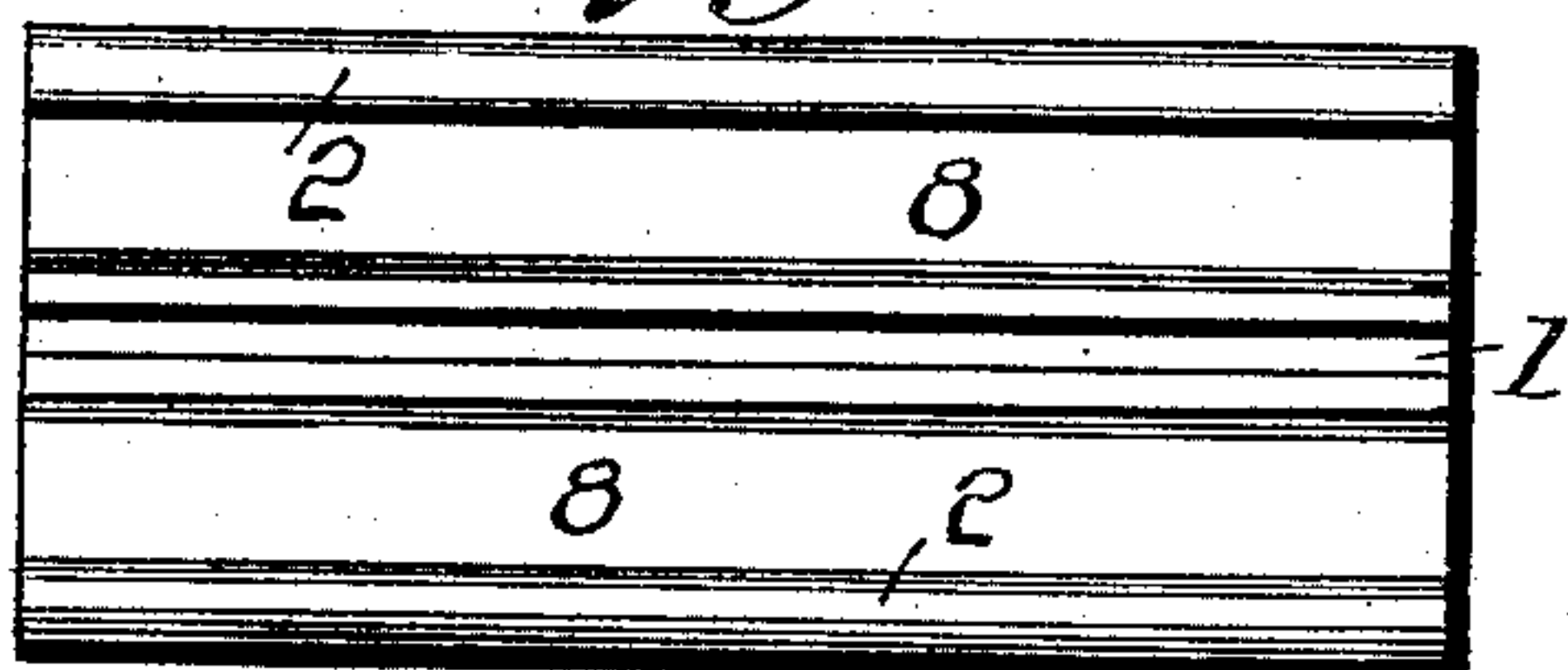


Fig. 4.

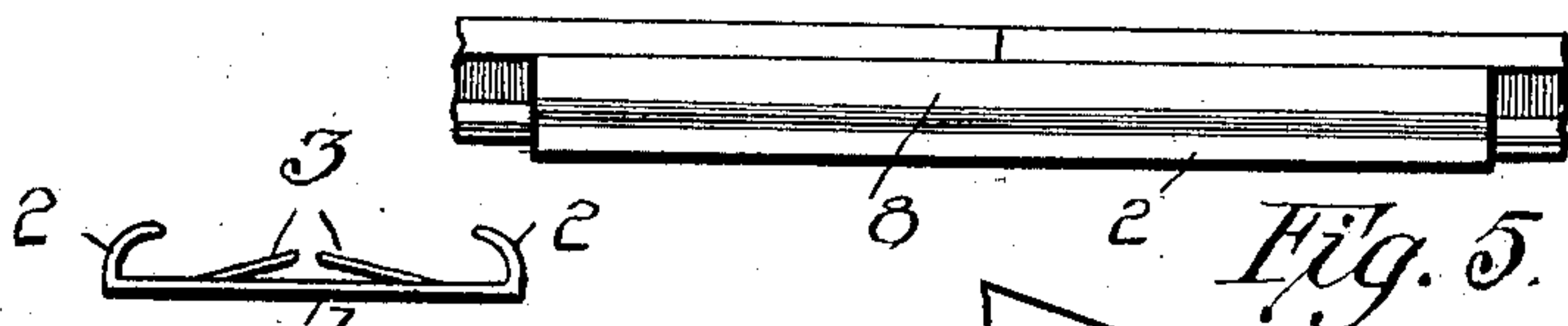
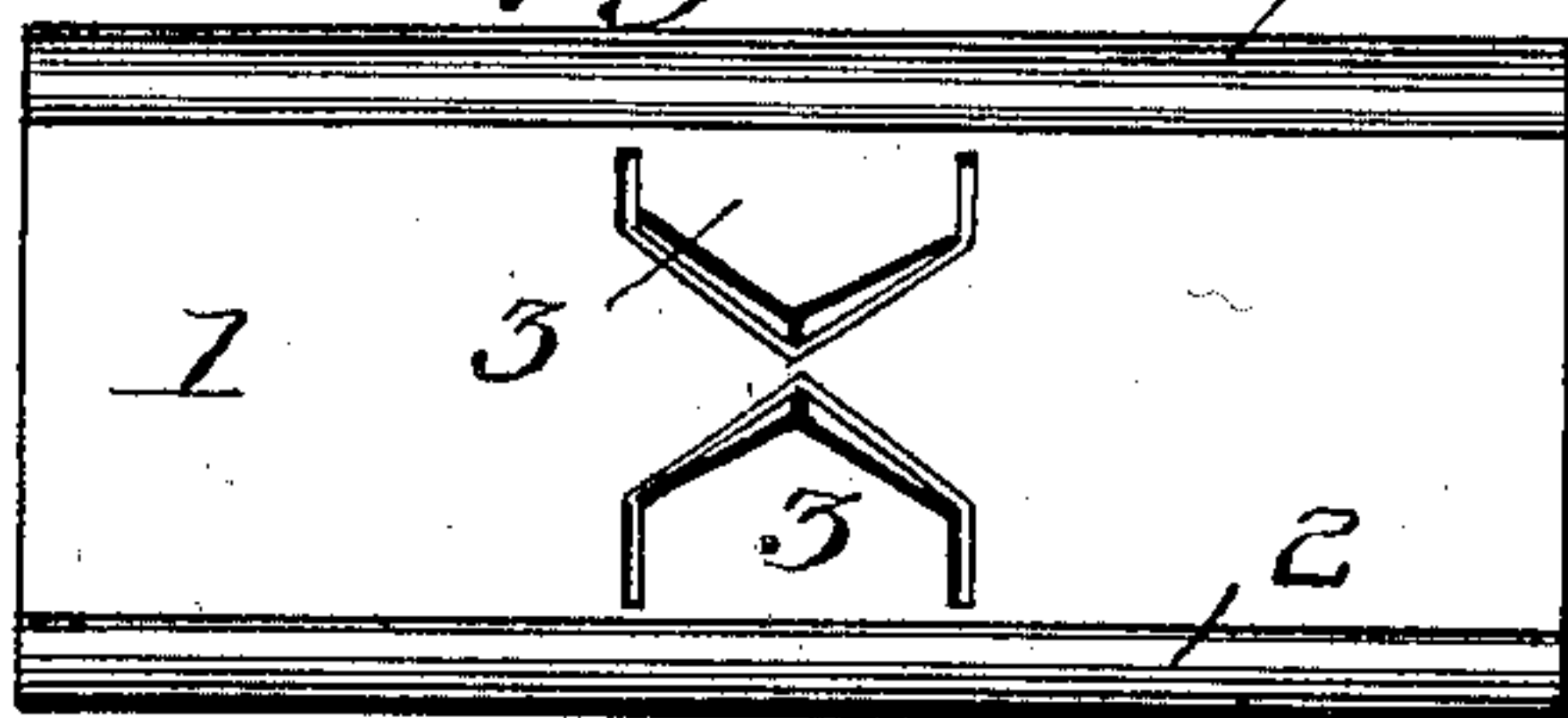


Fig. 6.

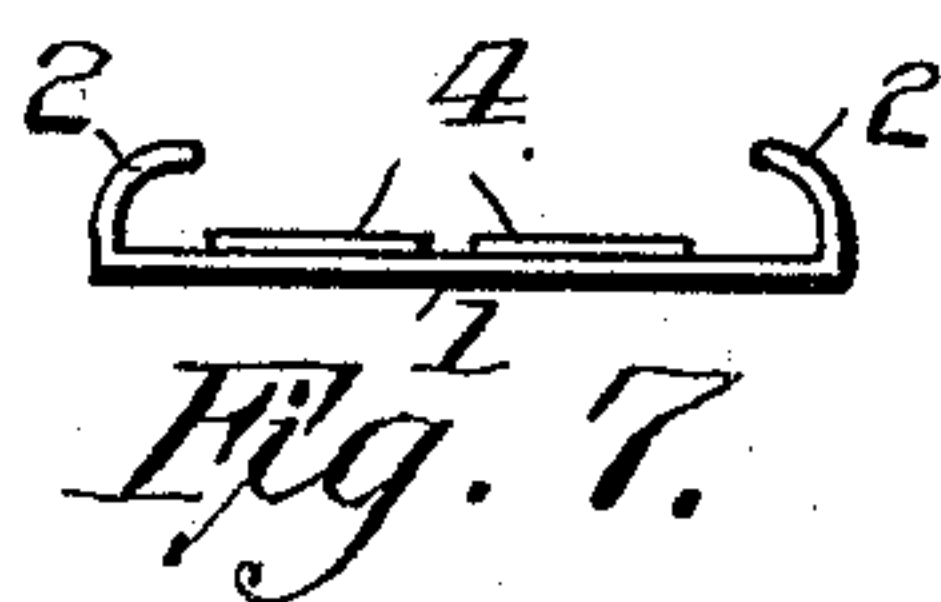


Fig. 7.

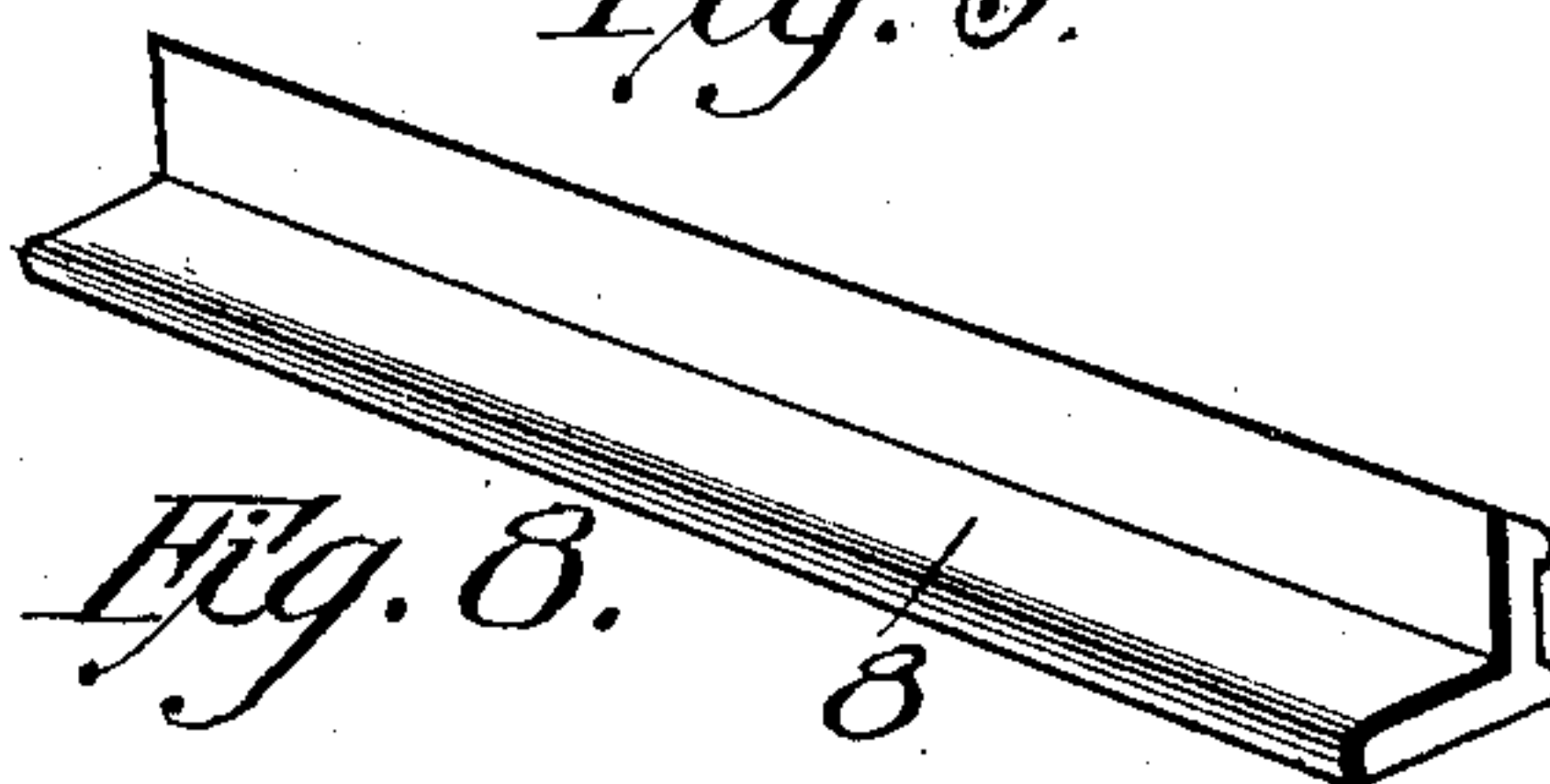


Fig. 8.

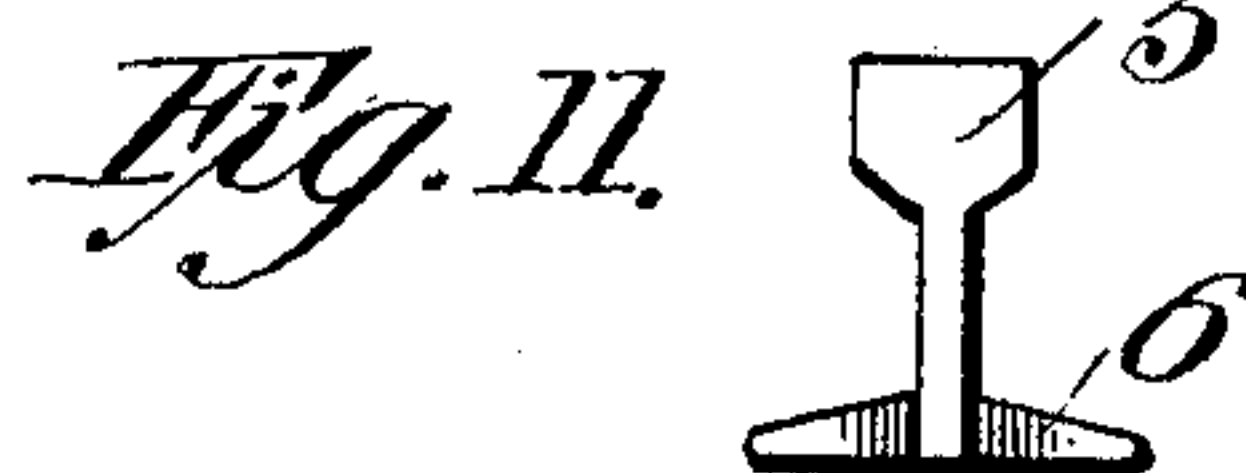


Fig. 11.

Fig. 10.

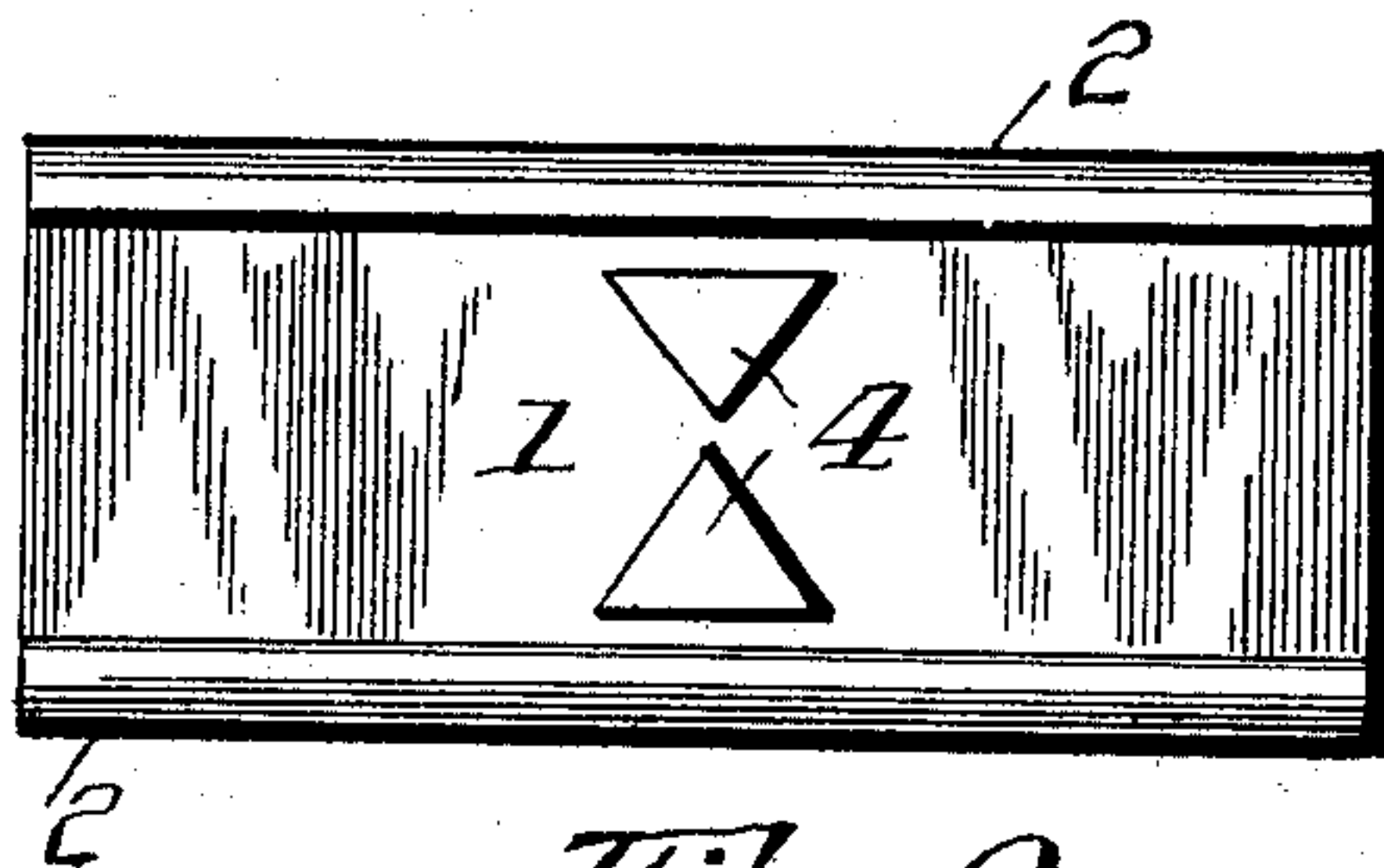
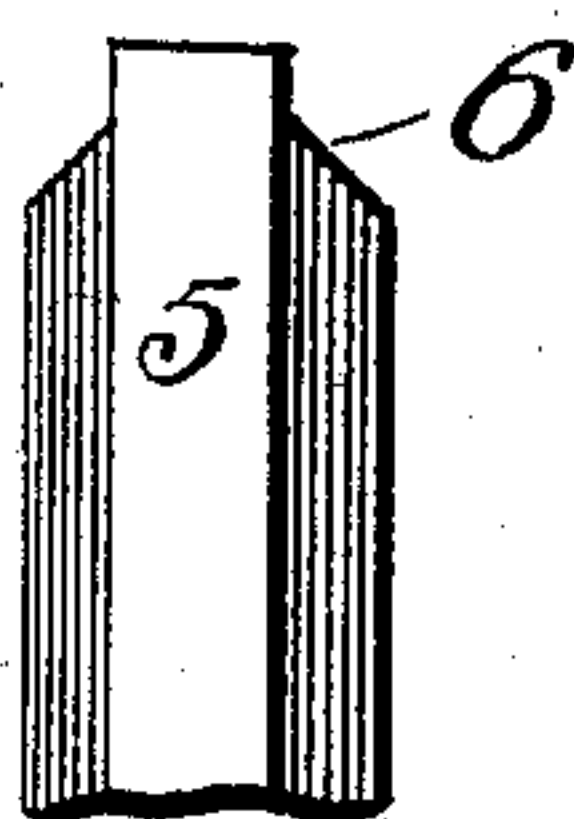


Fig. 9.

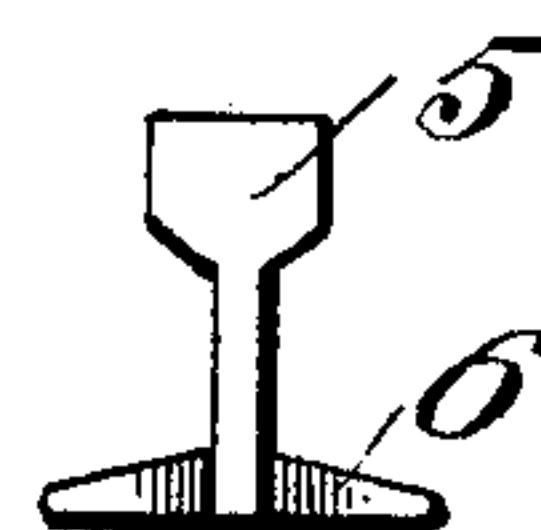


Fig. 12.

Witnesses:
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UNITED STATES PATENT OFFICE.

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OF ONE-FIFTH TO AUGUST FREDERICK WILHARM, OF PITTSBURG, PENN-
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RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 746,620, dated December 8, 1903.

Application filed September 22, 1903. Serial No. 174,164. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK WILLIAM WILHARM, a citizen of the United States of America, residing at Swissvale, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in rail-joints; and the primary object of the invention is to provide novel and effective means for the joining of the rails together without the aid of bolts and nuts through the fish-plates and webs of the rails, as is now generally employed.

It is another object of the present invention to provide means to prevent the creeping of the rails; and it is a still further object to provide a joint that may be easily and quickly made and as easily and as quickly removed, whereby to permit the removal of the rails for any desired cause.

The invention resides in the novel construction, combination, and arrangement of parts, as will be hereinafter more specifically described, and then particularly pointed out in the claims, and in describing the invention in detail reference will be had to the accompanying drawings, forming a part of this application, and wherein like numerals of reference will be employed to designate like parts throughout the different views, in which—

Figure 1 is a top plan view of my improved joint in position on the rails. Fig. 2 is an end view of the joint, showing the rail in transverse section. Fig. 3 is a top plan view of the saddle-plate and fish-plates detached from the rails. Fig. 4 is a top plan view of the saddle or tie plate. Fig. 5 is a side elevation of the joint. Fig. 6 is an end view of the form of saddle or tie plate shown in Fig. 4. Fig. 7 is an end view of a modified form of construction of saddle or tie plate. Fig. 8 is a detail perspective view of one of the fish-plates. Fig. 9 is a top plan view of the modified form of saddle or tie plate shown in end view in Fig. 7. Fig. 10 is a top plan view of

a part of one rail. Fig. 11 is an end view of the rail, and Fig. 12 is an underneath plan view of a part of the rail.

My invention involves a saddle or tie plate on which the ends of the rails rest, this saddle or tie plate being provided with means to receive the ends of the rails and said ends being shaped so as to fit neatly with the said means on the saddle or tie plate, which construction is provided for the purpose of preventing the creeping of the rails. A pair of fish-plates engage underneath the tread of the rail and with flanges formed on the saddle or tie plate, the fish-plates being slightly tapered, preferably, as is the saddle or tie plate, in order to give a wedge principle to the parts when in position. These parts will now be described in detail.

1 indicates the base of the saddle or tie plate, which at each edge is provided with an upwardly-extending and inwardly-curved flange 2. One end of this plate is preferably made slightly wider than the other, and located approximately centrally of the length of the plate are abutments to be engaged by the ends of the rails. These abutments may be in the form of substantially triangular lips 3, as seen in Figs. 4 and 6, which are cut from the plate 1 and struck up beyond the plane of the upper face of said plate, as clearly seen in Fig. 6, or, instead of the construction just described, these abutments may be in the form of bosses 4, as seen in Figs. 7 and 9, the only difference in the saddle or tie plate in the construction shown in Figs. 4 and 6 and that shown in Figs. 7 and 9 being in the form or construction of the abutments. These abutments, as stated, are adapted to receive the ends of the rails, and these rails to this end are beveled, so as to conform to the angular sides of the abutments. The bevels 6 are made on the ends of the rail-base, and these bevels 6 fit against the angular sides of the abutments when the rails are in position. The fish-plates embody the vertical member and the integral member or flange 8, the vertical member 7 having its upper edge beveled to conform to the underneath face of the rail-tread and the member or

flange 8 being adapted to have its edge received in the curved flange 2. As the saddle or tie plate is, as stated, slightly wider at one end than the other, the fish-plates will also
5 be slightly wider to impart a wedge shape thereto, so that they will be securely held in position when inserted. The saddle or tie plate may be securely spiked to the cross-ties after laying of the rails.

10 In operation the rails are laid on the saddle or tie plate with their beveled ends in engagement with the abutments and the wedge fish-plates then inserted into position endwise and the joint is complete. The fish-plates
15 wedging against the flanges 2 and the webs of the rails are securely held, and the engagement of the spikes (not shown) with the flanges 2 securely fastens the tie-plate to the cross-ties.

20 As shown in figure, I prefer to have the fish-plates 8 normally supporting the rails at the ends, so as to hold the same clear of the base-plate 1 in order that as pressure is applied to the rails at their ends, as by the passing thereover of a train, the rails may have
25 a slight depression movement, which will tend to wedge the fish-plates at their edges against the underneath side of the tread and edge engaging the flanges, respectively. By
30 this means also wear on the edges of the fish-plates is provided for.

While I have herein shown and described the invention in detail as it is practiced by me, yet it will be evident that various changes
35 may be made in the details of construction without departing from the general spirit of my invention.

Having fully described my invention, what

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

1. In combination with the rails having the base thereof at the ends beveled, of a tie-plate having abutments on its upper face to be engaged by the beveled ends of the rails, curved flanges carried on the edges of said
45 tie-plate, and fish-plates engaging underneath the tread of the rails and with said flanges of the tie-plate, substantially as described.

2. In combination with the rails having the base thereof beveled at the ends, a tie-plate
50 having abutments provided with beveled sides to be engaged by the beveled ends of the rail-base, flanges carried by the tie-plate, and fish-plates wedged between said flanges and the underneath face of the rail-tread,
55 substantially as described.

3. In a rail-joint, the combination of a tie-plate having abutments on its upper face to be engaged by the ends of the abutting rails, and provided at each edge with an upwardly
60 and inwardly extending flange, and fish-plates wedged between the rail-tread and said flanges, substantially as described.

4. In a rail-joint, a tie-plate provided on its upper face with oppositely-disposed abutments and having flanges along its edges, and fish-plates adapted to be wedged between the rail-tread and said flanges, substantially as
65 described.

In testimony whereof I affix my signature
70 in the presence of two witnesses.

FREDERICK WILLIAM WILHARM.

Witnesses:

H. C. EVERT,

A. M. WILSON.