

No. 731,766.

PATENTED JUNE 23, 1903.

J. FRASER.
METALLIC TIE AND RAIL FASTENER.

APPLICATION FILED APR. 16, 1903.

NO MODEL.

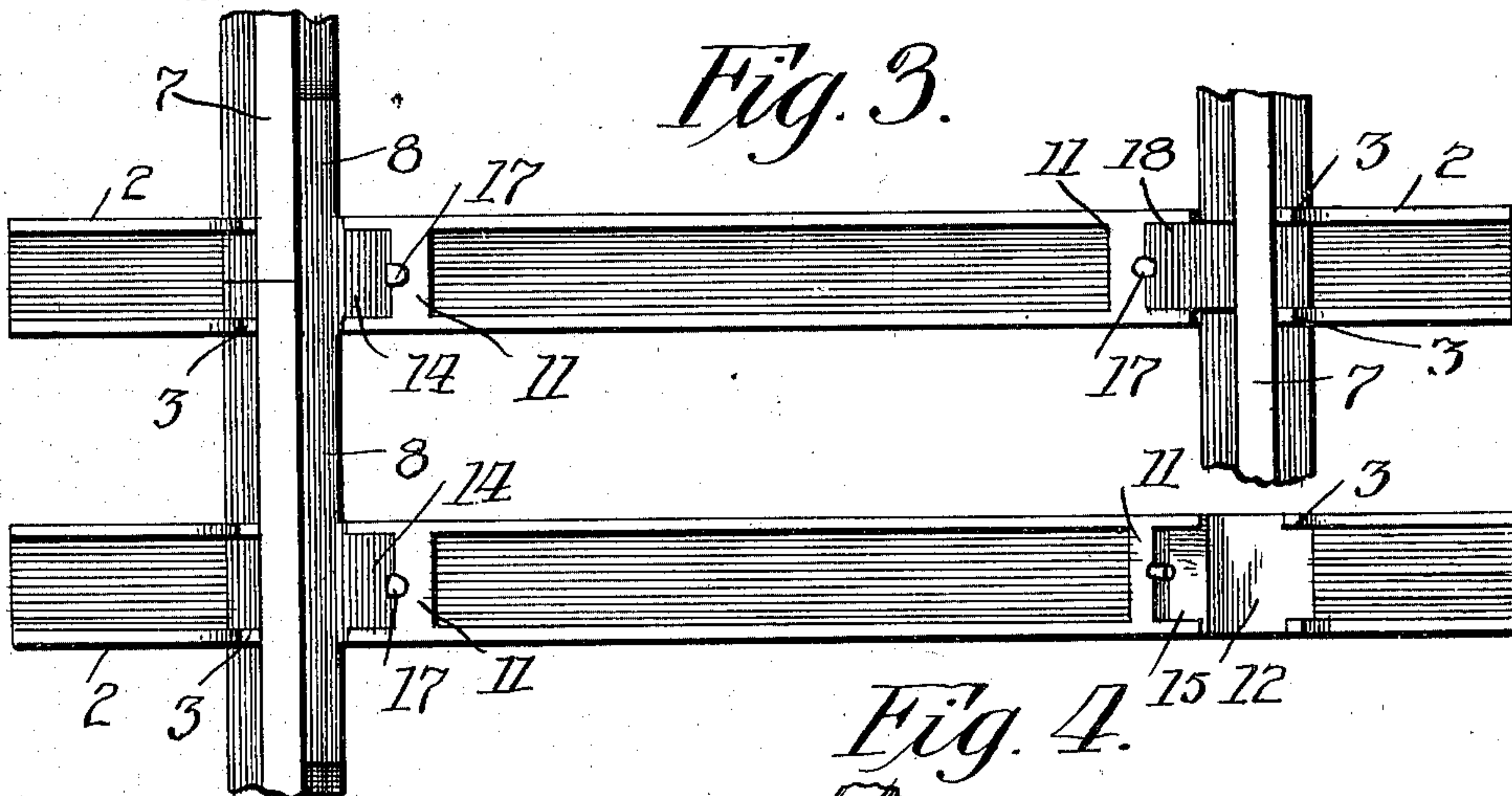
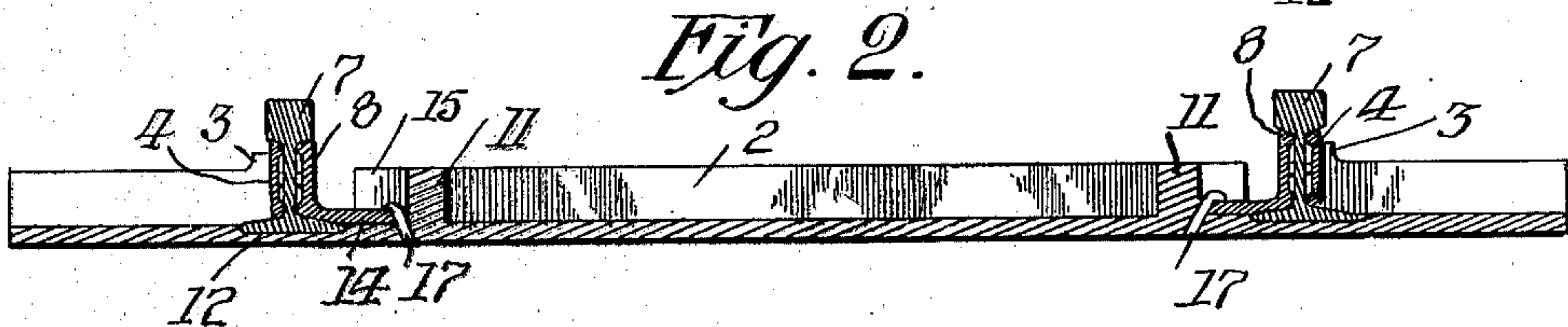
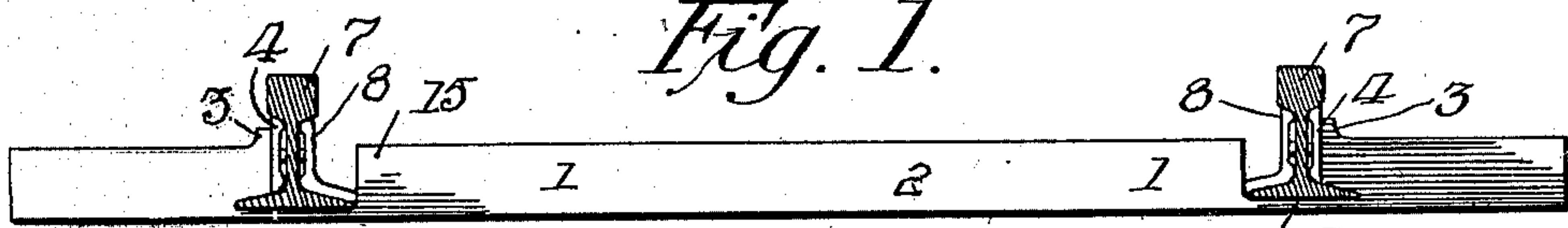


Fig. 4.

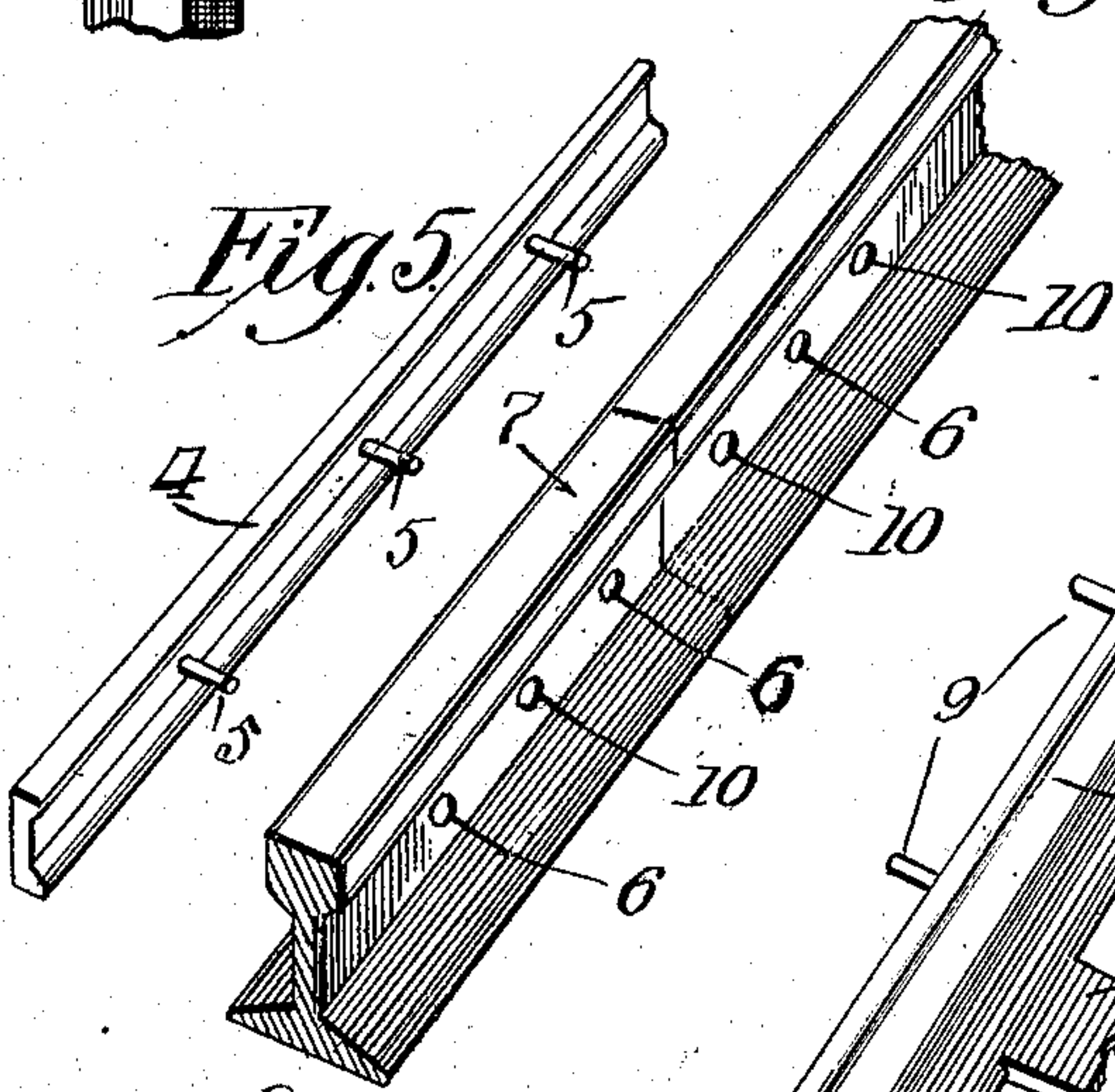
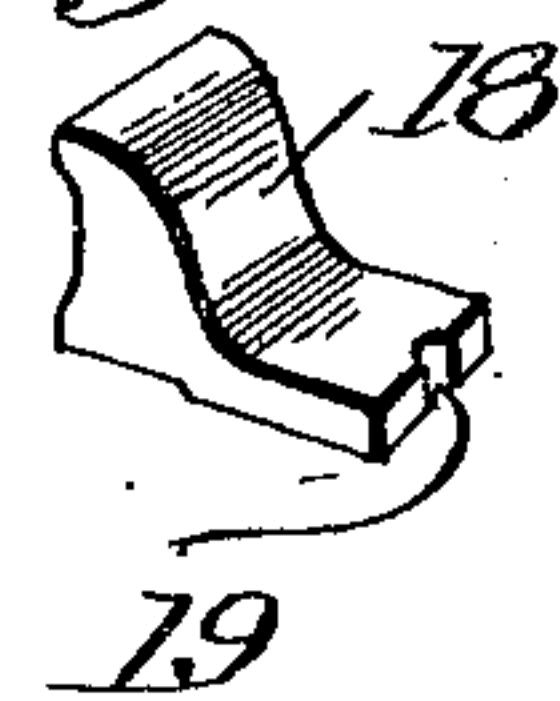
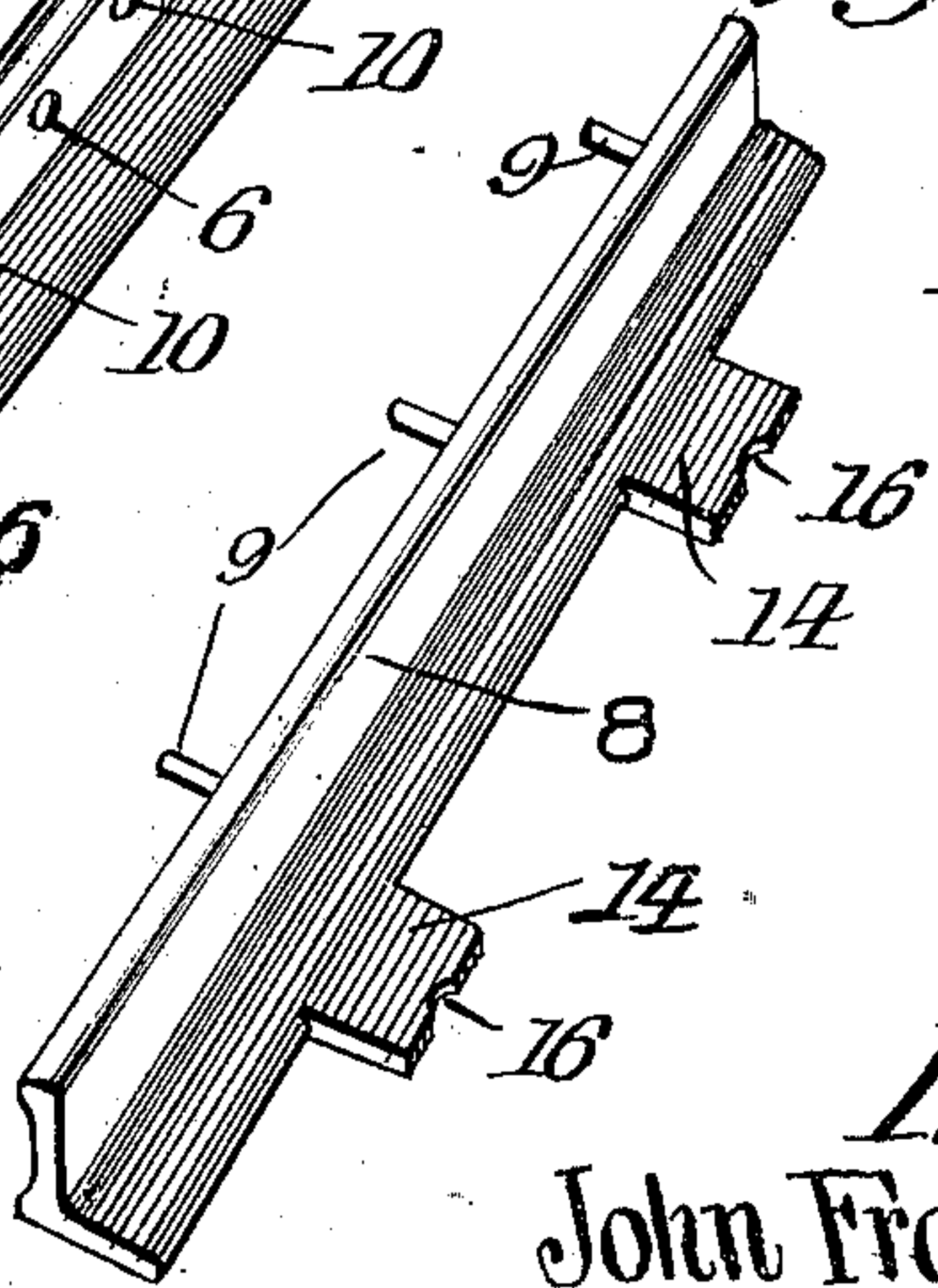


Fig. 6.



Witnesses:
J. H. Butkin
C. C. Potter.

Inventor,
John Fraser,
By Att. Evans & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

JOHN FRASER, OF CALIFORNIA, PENNSYLVANIA.

METALLIC TIE AND RAIL-FASTENER.

SPECIFICATION forming part of Letters Patent No. 731,766, dated June 23, 1903.

Application filed April 16, 1903. Serial No. 152,929. (No model.)

To all whom it may concern:

Be it known that I, JOHN FRASER, a citizen of the United States of America, residing at California, in the county of Washington and State of Pennsylvania, have invented certain new and useful Improvements in Metallic Ties and Rail-Fasteners, 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 metallic ties and rail-fasteners; and the object of the invention is to construct a cheap, simple, and effective metallic tie with means for securely and easily fastening the rails thereto.

Briefly described, my invention comprises a tie of substantially channel-beam form, constructed near each end with integral braces which are adapted to bear against the fish-plate which embraces the rails at the joint thereof. This fish-plate is constructed with pins or studs which project into openings in the rails. The insides of the rails are braced by the fish-plate at the joints, and at other points than at the joints of the rails an angular block may be employed, which is fastened to the ties in the same manner as the fish-plate.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate like parts throughout the several views, in which—

Figure 1 is a side elevation of my improved tie, showing the rail-fastening in end elevation and the rails in cross-section. Fig. 2 is a longitudinal sectional view of the tie, showing the rails and the fastening in cross-section. Fig. 3 is a top plan view of two of the ties, showing the rails secured in position. Fig. 4 is a detail perspective view of a part of the rails. Fig. 5 is a detail perspective view of the outside fish-plate. Fig. 6 is a detail perspective view of the inside fish-plate. Fig. 7 is a like view of the block or fish-plate employed at each tie other than those adjacent to the joint between the rails.

To put my invention into practice, I provide a tie 1, which is of channel-beam form, the sides 2 thereof adjacent each end being extended up, as seen at 3, in order to form

braces, which engage against the outer face of the outside fish-plate 4. This outside fish-plate 4 carries studs or pins 5, adapted to project into the openings 6 of the rails 7. It will be evident that as many of these studs or pins will be employed as there may be holes or openings in the rails upon which the fastener is to be employed, and in the present illustration I have shown three of the studs or pins and three holes 6 in each rail. Two of the studs or pins 5 will consequently engage in two of the holes 6 in one of the rails, and the remaining stud or pin 5 will engage in one of the holes in the abutting rail. At the joint between the rails I employ a fish-plate 8 of the form seen in Fig. 6 of the drawings, having a plurality of studs or pins 9 for engagement in the holes 10 of the rails. As two of the pins are engaged in the holes in one rail, consequently two of the pins or studs 9 will engage in the holes 10 of the opposite rail and one pin 9 will engage in one hole in the abutting rail. The tie is constructed with walls 11, and between these walls 11 and the abutting braces 3 the tie is recessed, the bed thereof being also recessed, as seen at 12, to form a seat for the base of the rail 7. In this recess or cut-away portion the rails are placed with their base on the seat 12, and the fish-plates 8 are placed in position, as seen in Figs. 1, 2, and 3, these plates 8 being constructed with lugs 14, which engage in the pockets 15, provided therefor in the tie. The outer edges of the lugs 14 are notched, as at 16, to receive the securing-pin 17, passing through the opening therefor in the tie at an angle to the vertical substantially forty-five degrees, whereby said pin will normally remain in its position. At other points along the rail than at the joint I will employ an angular fish-plate or block 18 of the form seen in Fig. 7, which will seat in the pockets 15 of the tie and engage with the rail, on the inner face thereof, in the same manner as is done by fish-plate 8, this fish-plate or block 18 being notched at 19 to receive the securing-pin 17.

In practice it is not absolutely essential to employ a fish-plate 4, though I prefer to employ the same at the joints in order to give a wide bearing on each side of the rail, though it will be understood that all of the other ties except those which embrace the rail at the

joint, the braces 3, may be engaged direct with the side of the rail; likewise the fish-plates or blocks 18, which are at all points except at the joint, as shown in Fig. 3, where-
5 in at the right-hand side of the view the block or plate 18 is shown in position, while at the left-hand side of the view showing the joint the fish-plate 8 is shown in position.

It will be noted that various changes may
10 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
15 Patent, is—

1. A metallic tie and rail-fastener embodying a tie of substantially channel-beam form, the side walls of which are extended upwardly at the end to form the abutting braces for en-
20 gagement with the rails, seats formed on the bottom plate of said tie, partition-walls be-

tween the side walls of said tie, and pockets adjacent to said side walls to receive the extending lugs of the fish-plate, substantially as described. 25

2. A metallic tie and rail-fastener, comprising a metallic tie of substantially channel-beam form having the side walls cut away to form recesses to receive the rails, partition-walls connecting the side walls of said channel-beam, and fish-plates having extending
30 lugs for engagement with pockets formed in the tie, and securing-pins extending through the tie at an angle and engaging said lugs, substantially as described. 35

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

JOHN FRASER.

Witnesses:

ALLEN J. WHITE,
HARRY HUMPHRIES.