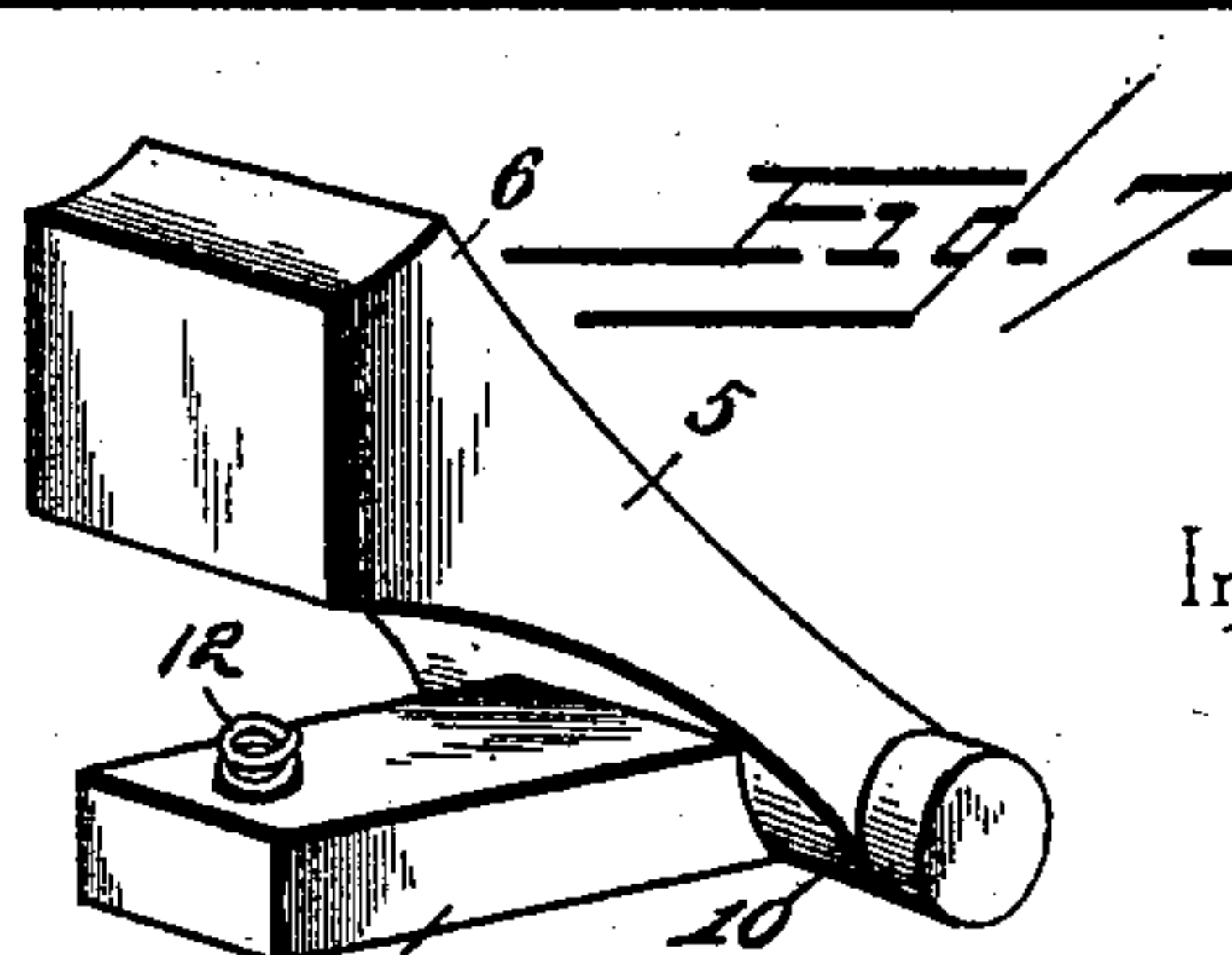
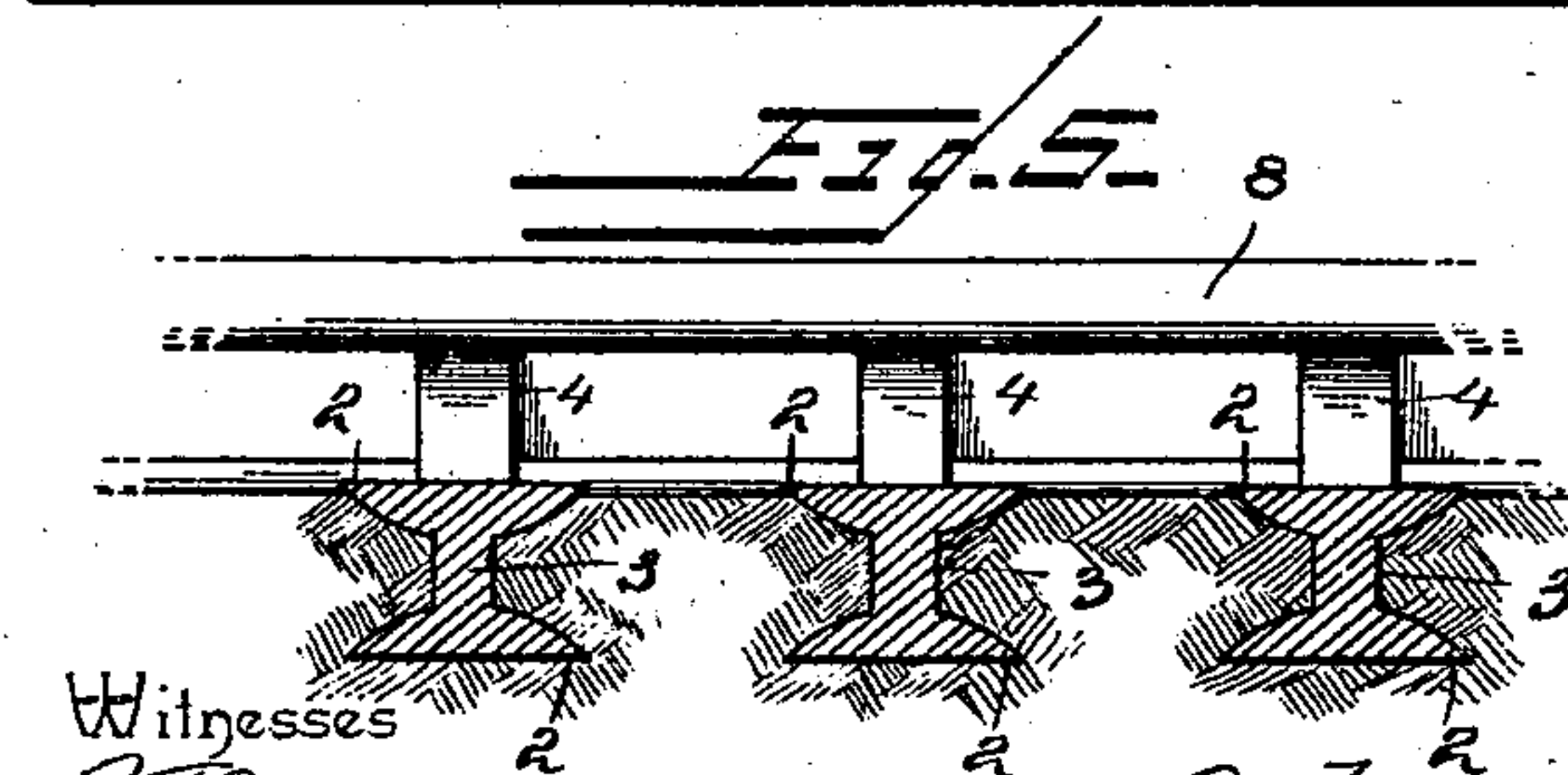
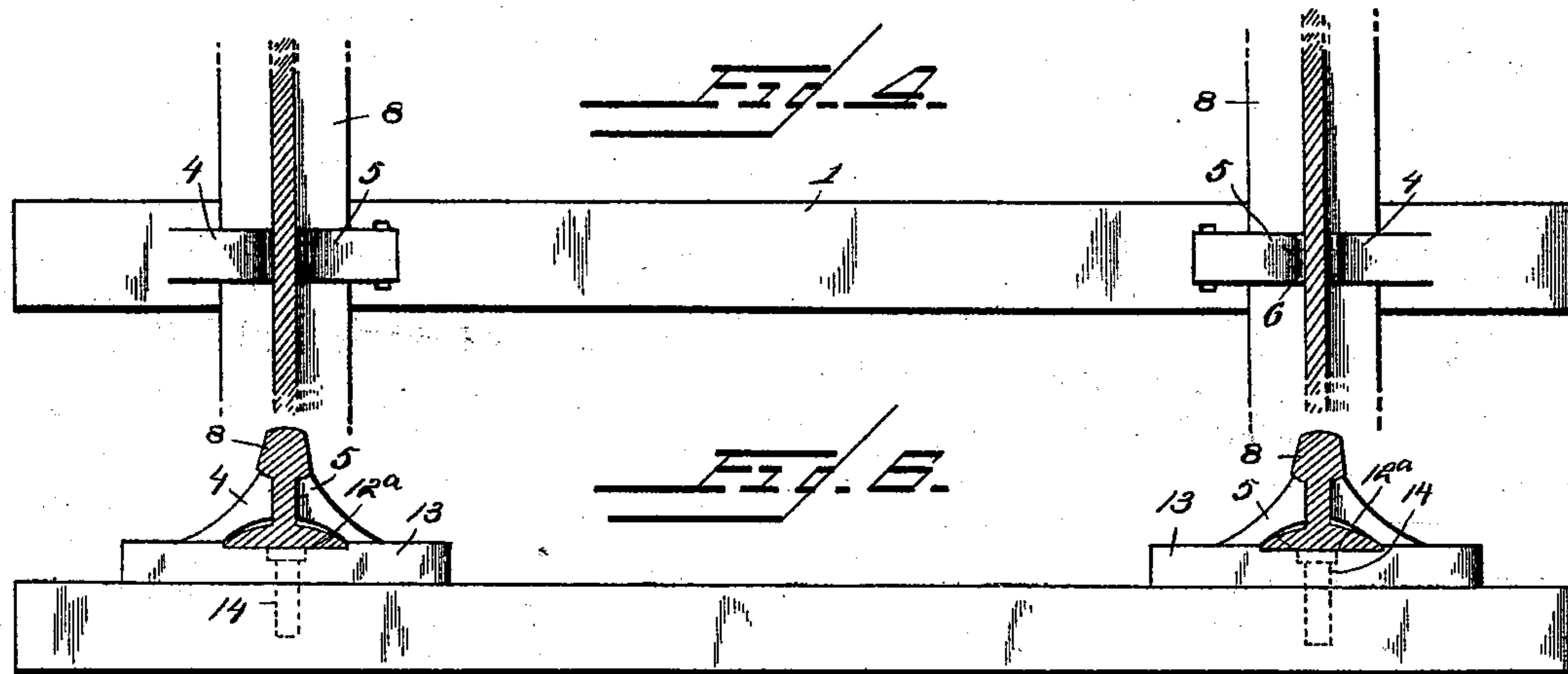
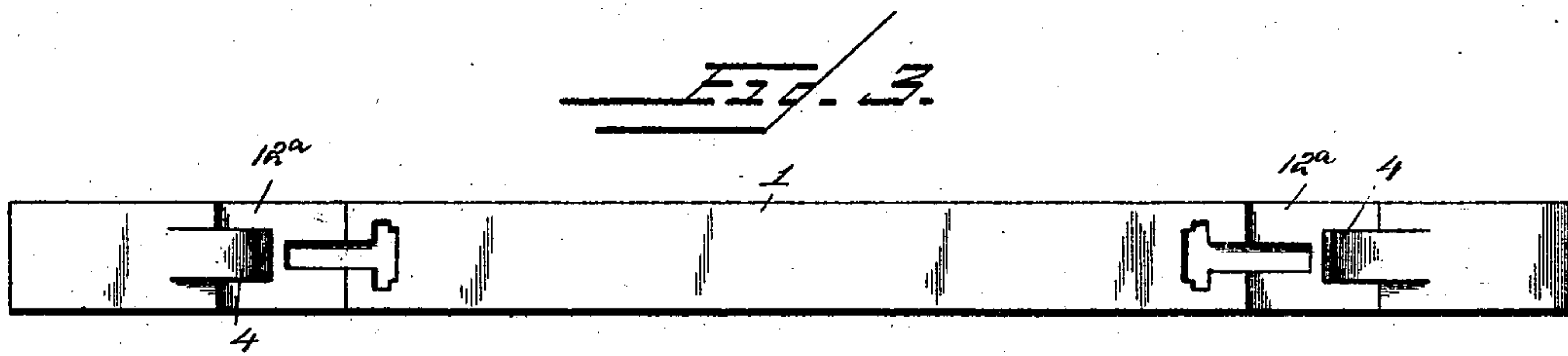
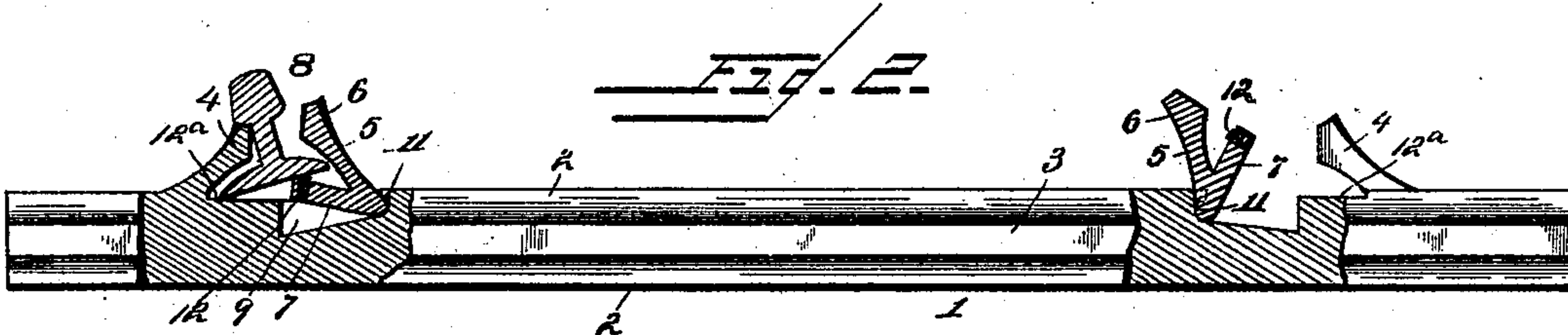
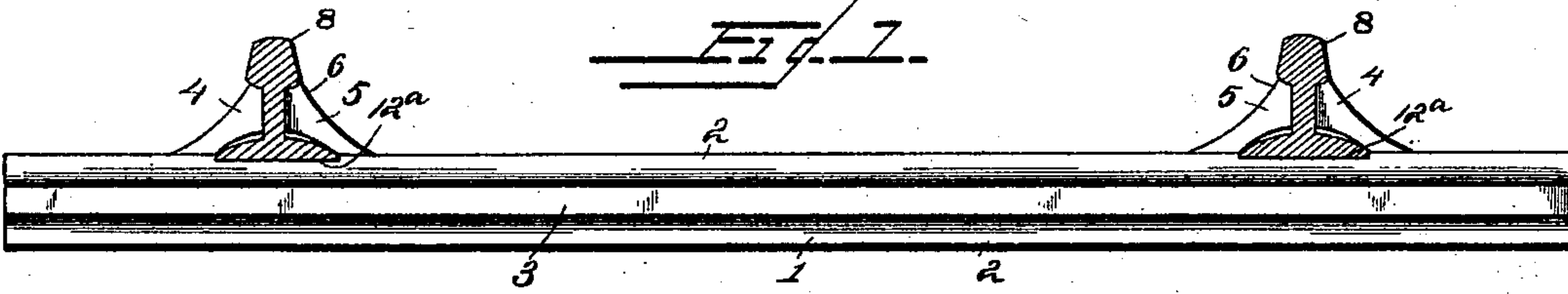


(No Model.)

J. QUINN.
RAILROAD TIE.

No. 547,739.

Patented Oct. 8, 1895.



Witnesses
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R. M. Smith

By His Attorneys,

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UNITED STATES PATENT OFFICE.

JOHN QUINN, OF HOUTZDALE, PENNSYLVANIA, ASSIGNOR OF ONE-FOURTH
TO JAMES S. CAMPBELL, OF SAME PLACE.

RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 547,739, dated October 8, 1895.

Application filed May 22, 1895. Serial No. 550,215. (No model.)

To all whom it may concern:

Be it known that I, JOHN QUINN, a citizen of the United States, residing at Houtzdale, in the county of Clearfield and State of Pennsylvania, have invented a new and useful Railroad-Tie, of which the following is a specification.

This invention relates to an improvement in railroad-ties.

10 The object of the present invention is to do away with the trouble of spiking rails to ties and to provide a metallic tie as a substitute for the ordinary wooden tie in common use, said metallic tie to be provided with
15 means whereby the rail may be secured thereto and held firmly in place or readily removed when desired.

Other objects and advantages of the invention will appear in the course of the sub-
20 joined description.

To the above end the invention consists in a metallic railroad-tie having certain novel features and details of construction and arrangement, as hereinafter fully described,
25 illustrated in the drawings, and finally embodied in the claim.

In the accompanying drawings, Figure 1 is a side elevation of a railroad-tie constructed in accordance with this invention with rails
30 applied thereto. Fig. 2 is a similar view partly in section, showing the manner in which the locking-chairs may be operated to receive or release the rail. Fig. 3 is a plan view of one of the improved ties with the
35 chairs omitted. Fig. 4 is a similar view with sections of rails applied, showing also the locking-chairs. Fig. 5 is a vertical transverse section through several ties. Fig. 6 shows the manner in which this invention may be ap-
40 plied to an ordinary wooden tie. Fig. 7 is a view of the chair.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

45 Referring to the accompanying drawings, 1 designates my improved metallic tie, which is formed with upper and lower horizontal flanges 2, the same being connected by means of an interposed web 3, formed integrally
50 with said upper and lower flanges. This form of metallic tie may of course be varied,

but that shown in the drawings is the preferred form, combining the requisite strength for supporting the rails with the necessary bearing-surface for said rails and also providing
55 an efficient hold for the ballast. Adjacent to its ends said tie is provided with integrally-formed upwardly and inwardly extending chairs 4, the same being located the proper distance apart, according to the gage of the
60 road. The inner faces of the chairs conform to the shape of the rail, being cut out underneath to embrace the base-flange of the rail, having also a vertical face adapted to bear
65 against the web of the rail, and further provided with an inclined upper edge or portion arranged to lie beneath the head of the rail, as shown.

5 designates a chair, which is pivotally mounted in the upper face of the tie, and is
70 made in the form of a bell-crank having an arm 6, forming the chair proper and corresponding in general shape to the stationary or integral chair 4, above referred to, said pivoted chair also having a lower arm 7
75 adapted to underlie the base of the rail, (shown at 8.) The tie is recessed in its upper face at two points to receive the lower arms 7 of the pivoted chairs, and said recesses, indicated at 9, are made slightly deeper than
80 the depth of the arm 7, in order to permit a slight movement of the latter, whereby the chairs may properly adjust themselves to the rails. The chair 5 is provided at its elbow with laterally-projecting trunnions 10, and
85 the inner portion of the recess 9 is widened to receive said trunnions. The inner wall of the widened portion of the recess 9 is concaved, as indicated at 11, in order to prevent the accidental displacement of the chair, al-
90 though there is but little tendency to do this, as the strain is in an inward and downward direction, by reason of the upper portion of the chair bearing beneath the head of the rail and the lower arm of the chair being held
95 down by the rail and the weight of a train passing over the same.

The pivoted and locking chair 5 is provided with a perforation in its lower arm beneath the base of the rail for the reception of a
100 small spiral spring 12, and said spring is adapted to bear firmly against the base of the

rail, the effect of which is to hold the lower arm of the chair depressed and to afford a firm engagement between the upper arm of said chair and the rail.

5 In operation the pivoted chair is tilted upward, as indicated in Fig. 2, and the rail is also tilted in such manner as to bring the outer portion of the base-flange thereof beneath the stationary chair 4, the opposite or
10 inner portion of the base-flange of the rail entering between the upper and lower arms of the pivoted and locking chair. By pressing the rail downward the base-flange thereof operates against the lower arm of the pivoted
15 chair or against the spring carried thereby, when said chair will spring into the position indicated in Fig. 1, in which position it forms an effective brace and lock for the rail, the latter being capable of removal only when
20 lifted.

In order to more effectively hold the rails laterally with relation to the ties, each tie is provided in its upper flat face with a shallow depression 12^a at either end, said depression
25 being of a width corresponding to the width of the base of the rail. The strain caused by the lateral thrust of the cars and trucks will thus be applied to the ties themselves and a large proportion of the whole strain be re-
30 moved from the chairs.

Fig. 6 shows how the invention may be varied to admit of the use of an ordinary wooden tie, this being accomplished by employing a base-plate 13, secured to the upper face of a
35 wooden tie by means of suitable screws or bolts 14. Two of such base-plates are employed and spaced a suitable distance apart, according to the gage of the road. Each plate is formed with the integral chair corresponding to the one, 4, above described, and is also
40 recessed in a manner similar to the metallic tie to receive the bell-crank chair and lock, which is also the same as the chair 5, above

described. This construction operates precisely in the same manner as in the metallic tie above described, and is only shown and referred to in the description for the purpose of illustrating the manner in which the locking-chair may be applied to an ordinary wooden tie.

It will be apparent that the relative positions of the stationary and pivoted chairs may be reversed—that is, the stationary chair may be located inside of the rail and the pivoted chair outside thereof.

It will also be apparent that other changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

A railroad tie comprising a metallic body having a flat upper surface and formed with 65 grooves or depressions therein for the reception of the bases of the rails, and also provided with other recesses for the reception of suitable chairs, and a pair of integrally formed rigid chairs, in combination with a pair of pivoted chairs made substantially in the form of bell cranks and provided with laterally projecting trunnions resting within the recesses in the upper face of the tie, the lower arms of said chairs being arranged in recesses 75 in the upper face of the tie beneath the bases of the rails, and a spring for the lower arm of each pivoted chair, arranged and operated substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN QUINN.

Witnesses:

W. IRVIN SHAW,
JAS. S. CAMPBELL.