

J. O. HICKMAN.  
RAILWAY CROSS TIE.  
APPLICATION FILED AUG. 8, 1907.

906,710.

Patented Dec. 15, 1908.

2 SHEETS—SHEET 1.

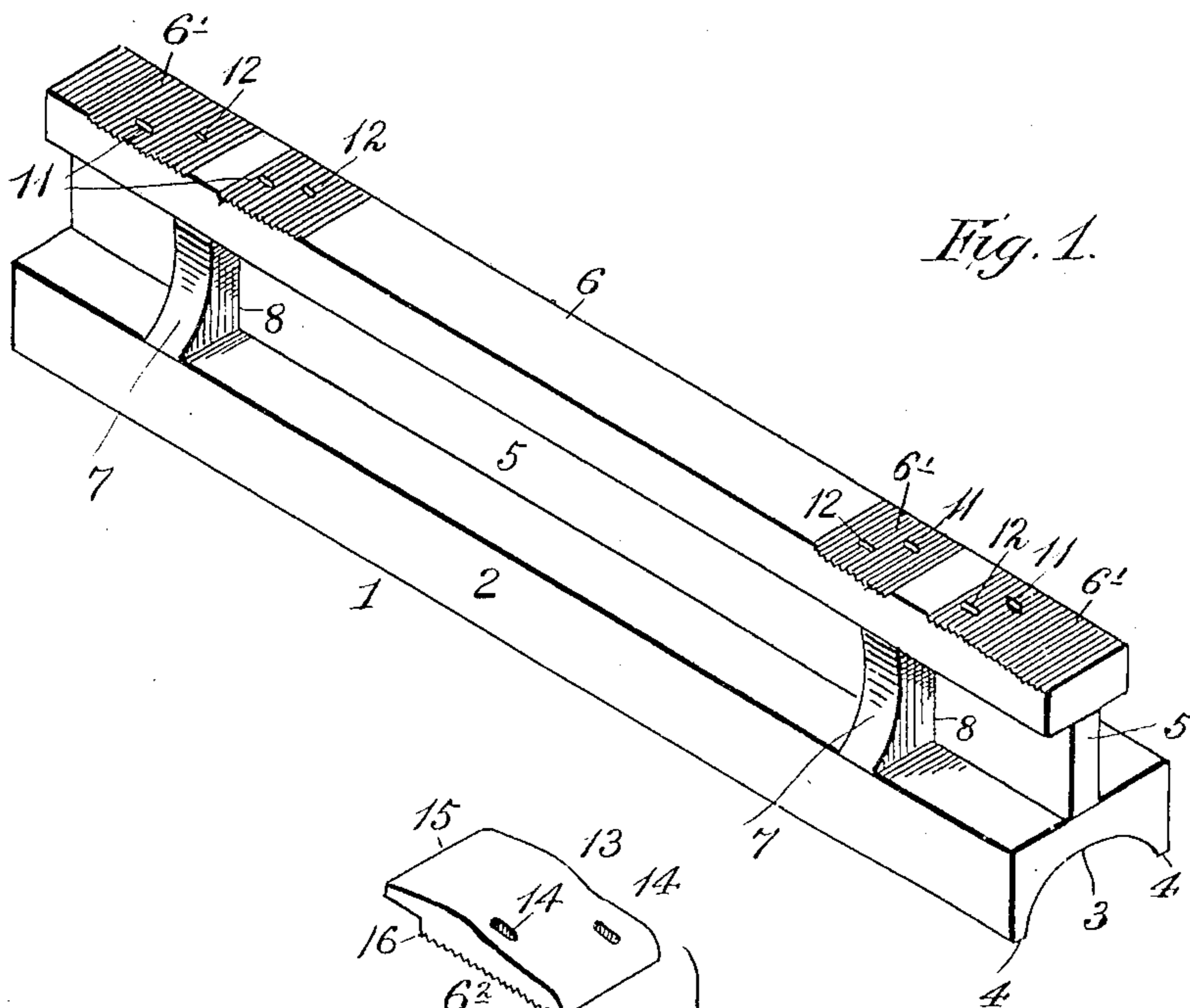


Fig. 1.

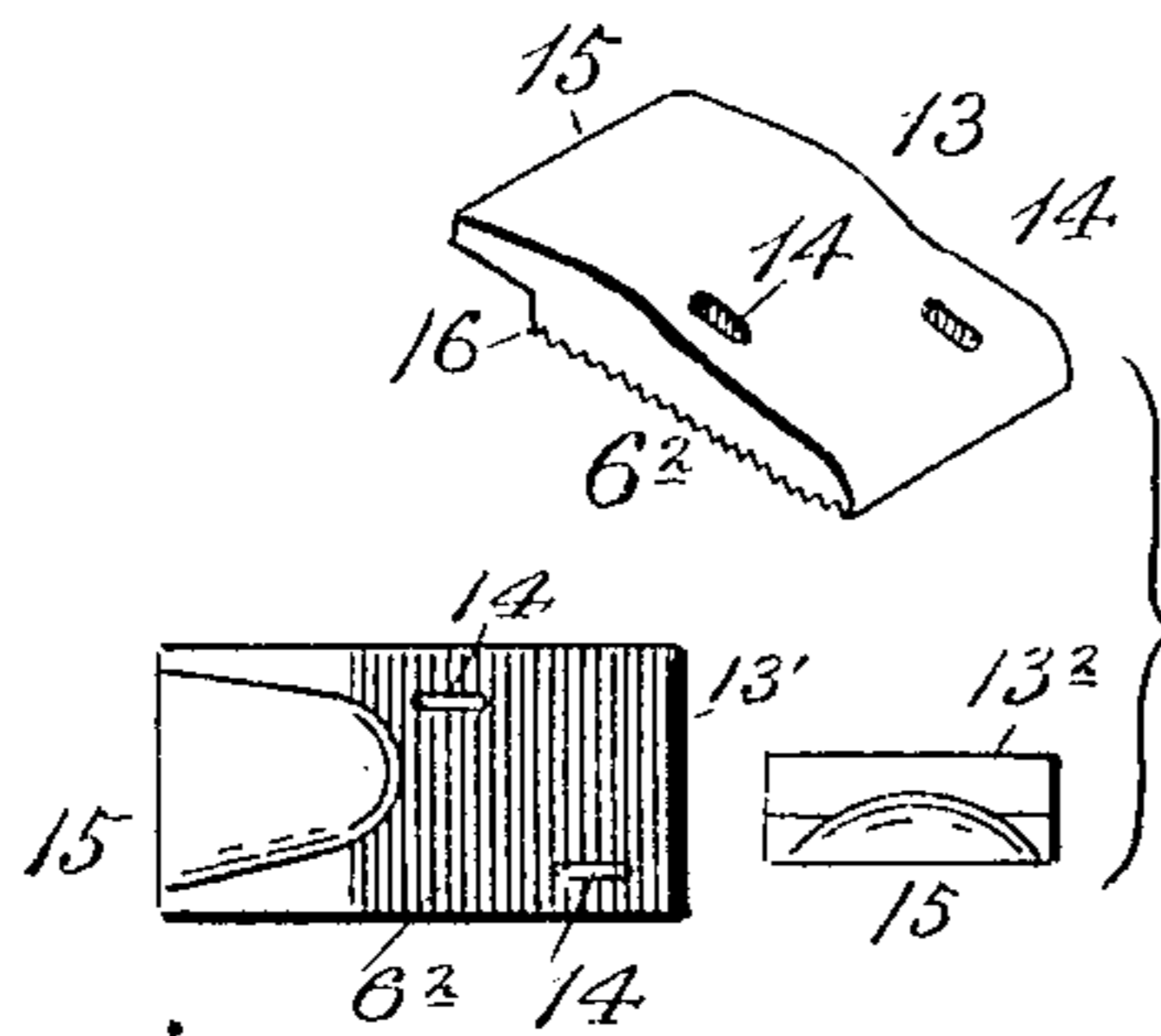


Fig. 5.

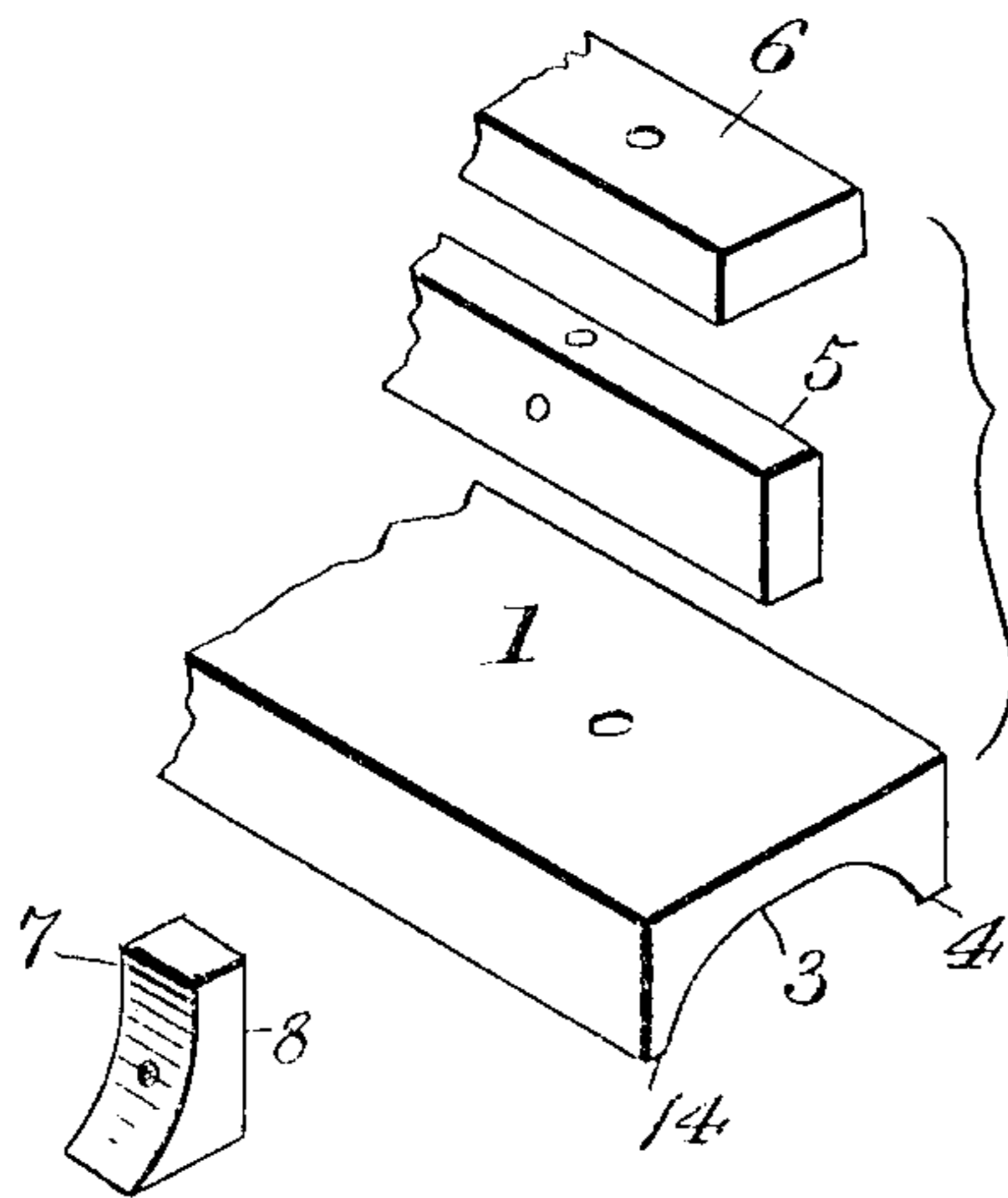


Fig. 6.

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2 SHEETS—SHEET 2.

Fig. 3

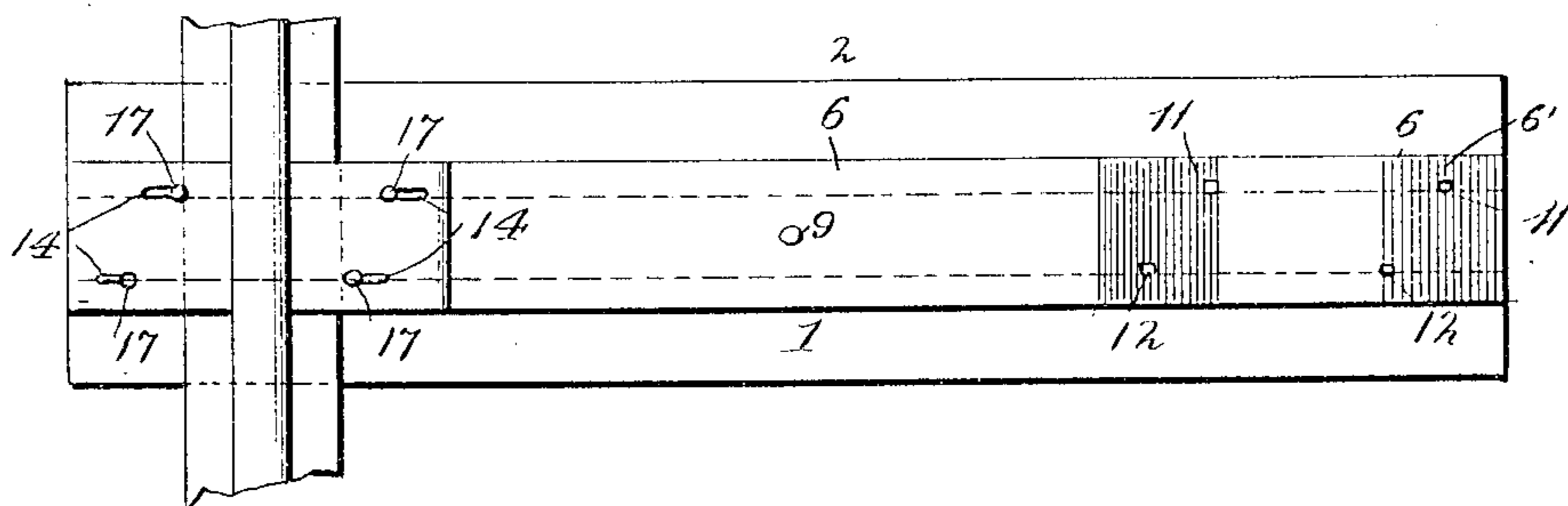
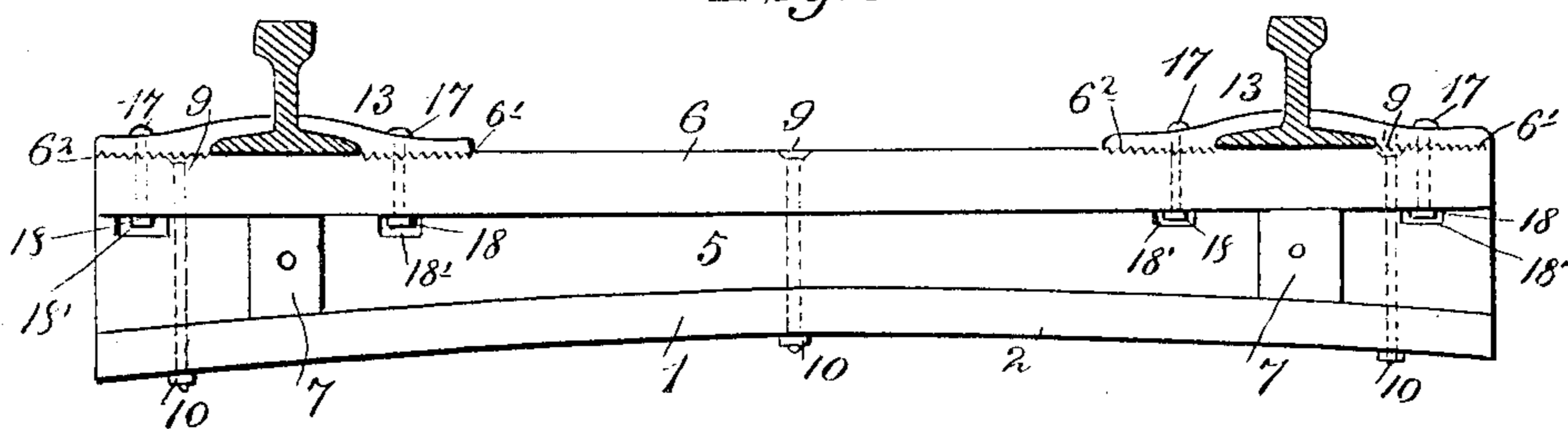


Fig. 4.

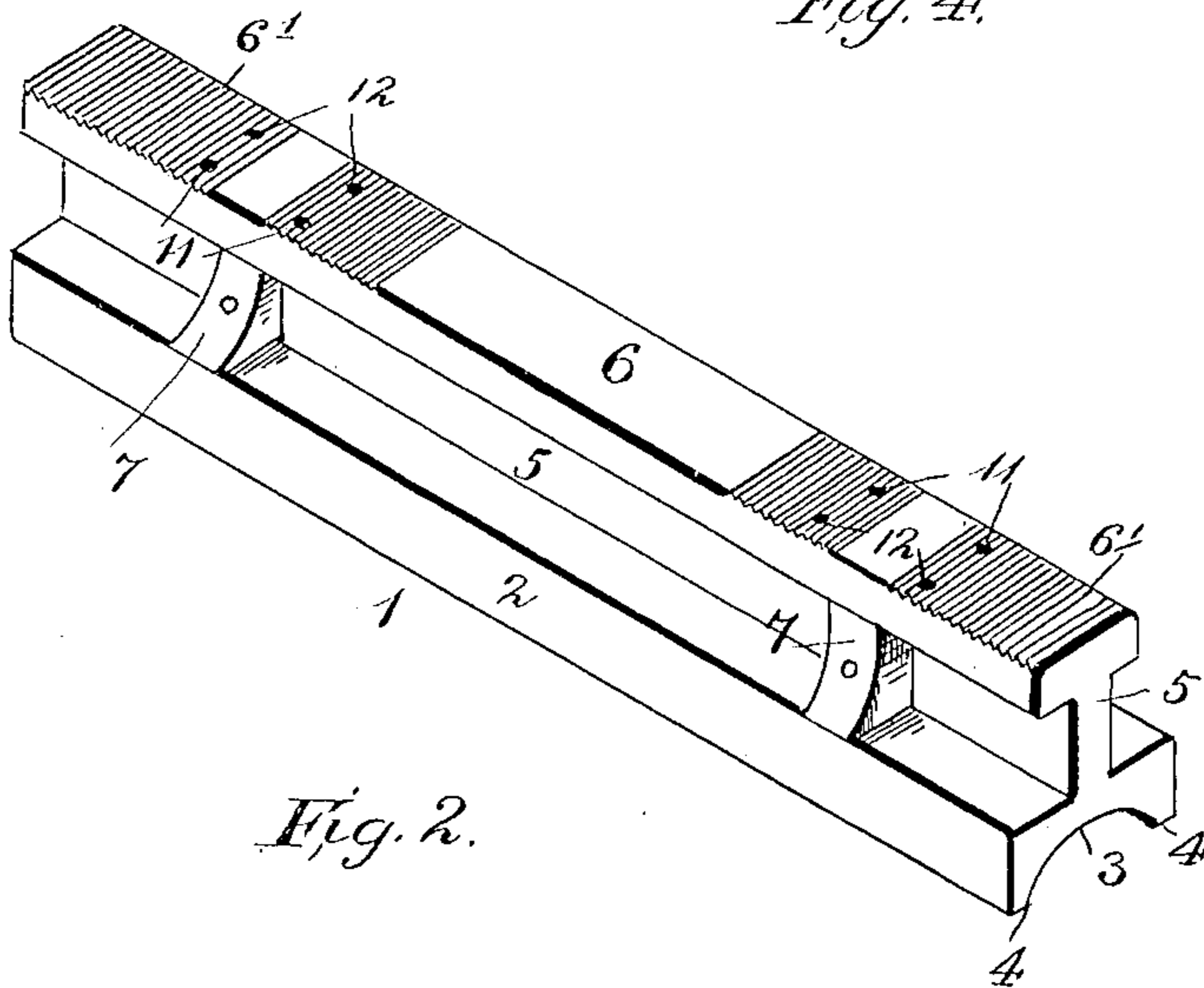


Fig. 2.

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# UNITED STATES PATENT OFFICE.

JACOB O. HICKMAN, OF BUTTERFIELD, ARKANSAS.

## RAILWAY CROSS-TIE.

No. 906,710.

Specification of Letters Patent.

Patented Dec. 15, 1903.

Application filed August 3, 1907. Serial No. 537,655.

*To all whom it may concern:*

Be it known that I, JACOB O. HICKMAN, a citizen of the United States, residing at Butterfield, in the county of Hot Spring and State of Arkansas, have invented certain new and useful Improvements in Railway Cross-Ties, of which the following is a specification.

My invention has relation to railway cross-ties, and consists in a tie made in one piece, having its base arched longitudinally and cross-wise, its web and crown-plate supported by braces, together with means for securing the railway rails in place.

In the accompanying drawings, Figure 1, is a perspective view of my cross-tie when made in one piece. Fig. 2, is a perspective view of my cross-tie where the braces are made separately and secured in place by bolts, or by bolts and nuts. Fig. 3, is an elevation of my cross-tie when made of several parts assembled, which figure also shows the railway rails in place, and held by holding-blocks. Fig. 4, is a top plan view of my invention as shown in Fig. 3, the right-hand rail and holding blocks being left off. Fig. 5, is a group, showing different views of the holding-blocks. Fig. 6, is a group, showing the different parts of my cross-tie, whether the cross-tie be made in one solid piece, or in separate pieces and assembled.

Similar numerals refer to similar parts throughout the several views.

In describing my invention I read the drawings from left to right.

My invention is described as follows:—

My tie is about 8 feet long, in which the numeral 1, represents the base-plate, the under side of which is arched as shown at 2, so that the ends of the arch are about two inches lower than the center thereof. The said base also has a cross-arch 3, its entire length; this cross-arch turns downwardly at each end, but does not extend entirely to the side walls of the plate, leaving at each side a foot 4, about one inch wide.

The web or center piece 5, is the same length as the base and stands vertically on the upper face thereof, and is about 4 inches high by 1 inch thick; the top, or crown 6, is the same length as the other two plates 1 and 5, and is about 1 inch thick, and from about 3 to 5 inches wide.

When the tie rests on a level plane, the

center of the longitudinal arch stands about 2 inches higher than at its ends, and the center of the cross-arch stands about two inches higher in its center than at its ends; said rail is also provided on each side of the web with braces 7, underneath the crown-plate, their straight sides resting against the faces of said web, the outer faces of their upper ends coming out flush with the edges of said crown-plate, the outer edges of their lower ends coming out flush with edges of the base-plate.

Passing through the crown-plate 6, at each end and on each side of the web, are square bolt holes 11 and 12, of the regulation size, for bolts to pass through. The bolt holes 11, on one side of the web are about 4 inches apart, longitudinally reckoned, and the bolt holes 12, on the other side are about the same distance apart, longitudinally reckoned, and about 2 inches inwardly from the other bolt holes. The purpose of this irregular location is to prevent the holes from coming directly across said crown-plate and thereby weaken it at these particular points.

In order to hold the railway rails I provide my cross-tie with four holding-blocks, (see Fig. 5), in which the numeral 13, represents one of the blocks which is provided with longitudinal slots 14, corresponding with the bolt holes 11 and 12. These blocks are each provided with a nose 15, which fits over the flange and against the web of the railway rail, and a shoulder 16, which fits against the outer edge of the flange of the rail; 13<sup>1</sup>, is a bottom view of the block, showing the nose end 15, concave; 13<sup>2</sup>, is an end view of the block; these blocks are held in place by bolts 17, (see Figs. 3 and 4), which pass through said slots 14, through the bolt holes 11 and 12, in the crown-plate 6, and are secured by nuts 18, which screw up against the under face of said crown-plate.

The construction of my tie being provided with arches 2 and 3, insures against its slipping either sidewise or endwise. The top face of the crown-plate is provided with serrations 6<sup>1</sup>, and the lower faces of the holding-blocks 13, are provided with corresponding serrations 6<sup>2</sup>, and the web 5, is provided in its upper edge, immediately under the ends of the holding-blocks, with recesses 18<sup>1</sup>, so that the nuts 18, may be conveniently turned, but I may, and sometimes do, make the holes 11 and 12, wide enough

apart, so as to be on either side of the web, in which case I may do away with the recesses 18<sup>1</sup>.

I have given the shape, and the approximate dimensions of the various parts of my tie, to aid in its manufacture, but I do not confine myself to the exact dimensions given, as I may vary the dimensions as experience may demand.

Although I have specifically described the combination, construction and arrangement of the several parts of my invention I do not confine myself particularly to such specific combination, construction and arrangement, as I claim the right to make such changes and modification therein as may clearly fall within the scope of my invention, and which may be resorted to without departing from the spirit, or sacrificing any of my patentable rights therein.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A railway cross-tie, consisting of a base-plate 1, provided with a longitudinal arch 2, its entire length, a cross-arch 3, nearly its entire width, leaving at each end of said arch 3, a foot 4; a web 5, seated vertically and longitudinally on the upper face and in the center of said base, and a crown-plate 6, seated horizontally and longitudinally at its center on the upper edge of said web, said crown-plate provided with serrations 6<sup>1</sup>, and square bolt-holes 11, two on each end and one side of said web, and square bolt-holes 12, two at each end and on the other side of said web, none of said holes being opposite each other, with means for holding railway rails in place, substantially as shown and described, and for the purposes set forth.

2. A railway cross-tie, consisting of a base-plate 1, provided with a longitudinal arch 2, its entire length, a cross-arch 3, nearly its entire width, leaving at each end of said arch 3, a foot 4; a web 5, seated vertically and longitudinally on the upper face and in the center of said base, and a crown-plate 6, seated horizontally and longitudi-

nally at its center on the upper edge of said web, said crown-plate provided with serrations 6<sup>1</sup>, and square bolt-holes 11, two on each end and one side of said web, and square bolt-holes 12, two at each end and on the other side of said web, said holes 12, being about two inches inwardly from said holes 11, with means for holding railway rails in place, substantially as shown and described and for the purposes set forth.

3. A railway cross-tie, consisting of a base 1, provided with a longitudinal arch 2, and a cross-arch 3; a web 5, provided at each end and its upper edge with recesses 18<sup>1</sup>, rising from said base; a crown-plate 6, provided at each end with bolt-holes 11 and 12, and on its upper face with serrations 6<sup>1</sup>; holding-blocks 13<sup>1</sup>, each provided with longitudinal slots corresponding to said bolt-holes, and on their under faces with serrations 6<sup>2</sup>; and a shoulder 16, said blocks adapted to be secured by bolts and nuts to the upper face of said crown-plate in position to hold a railway rail firmly in place, substantially as shown and described and for the purposes set forth.

4. In a device of the character described, a base-plate 1, provided with a longitudinal arch 2, and a cross-arch 3; a web 5, provided in its upper edge with recesses 18<sup>1</sup>; a crown-plate 6, provided at each end with bolt-holes 11 and 12, and on its upper face with serrations 6<sup>1</sup>; braces 7, resting on the base and supporting said crown-plate, and holding-blocks 13<sup>1</sup>, each provided with longitudinal slots corresponding to said bolt-holes, and on their under faces with serrations 6<sup>2</sup>, and a shoulder 16, said blocks adapted to be secured in place, to the upper face of said crown-plate in position to hold a railway rail firmly in place, substantially as shown and described and for the purposes set forth.

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

JACOB O. HICKMAN.

Witnesses:—

HENRY BERGER,

WILL J. THRASHER.