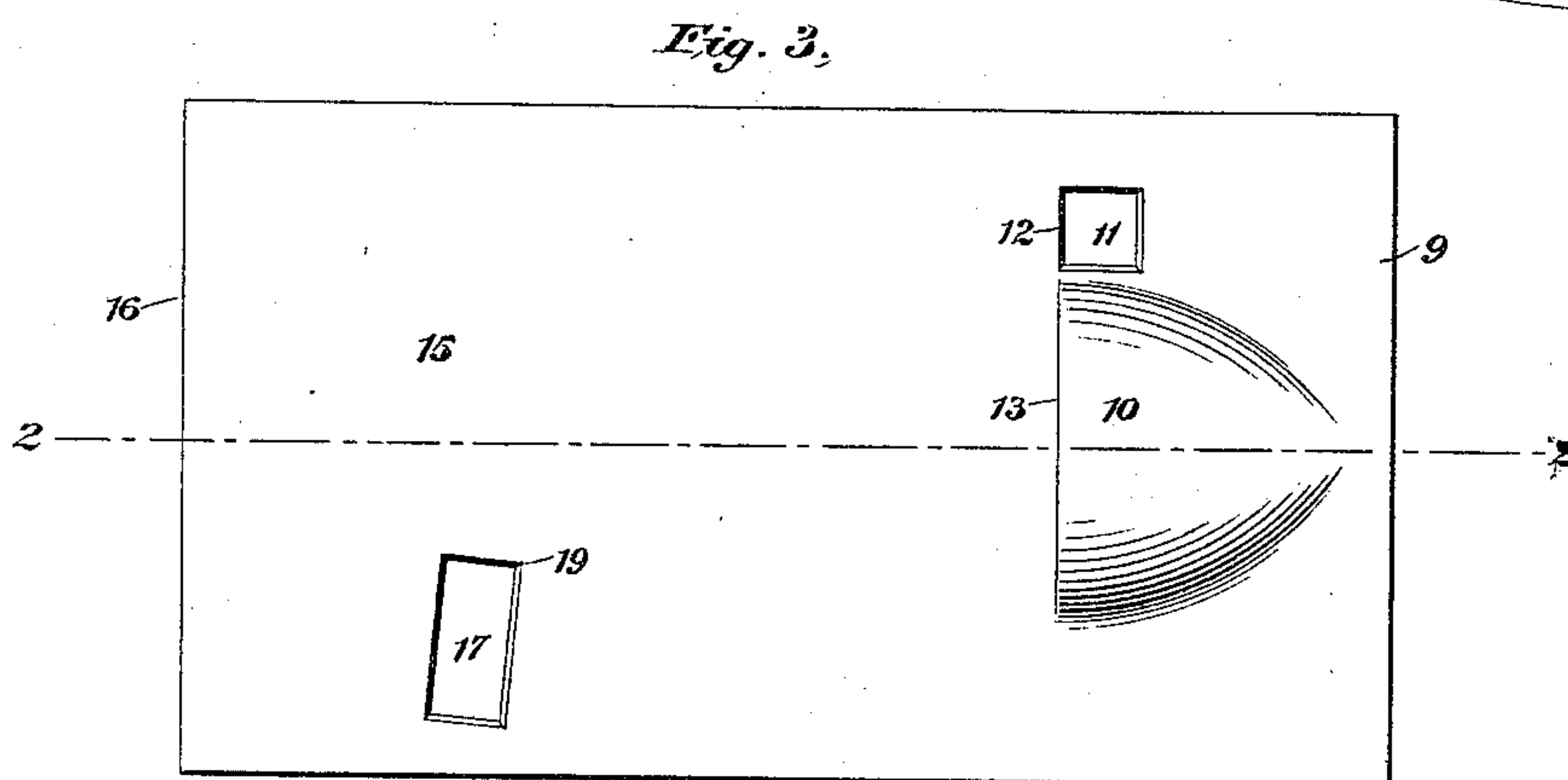
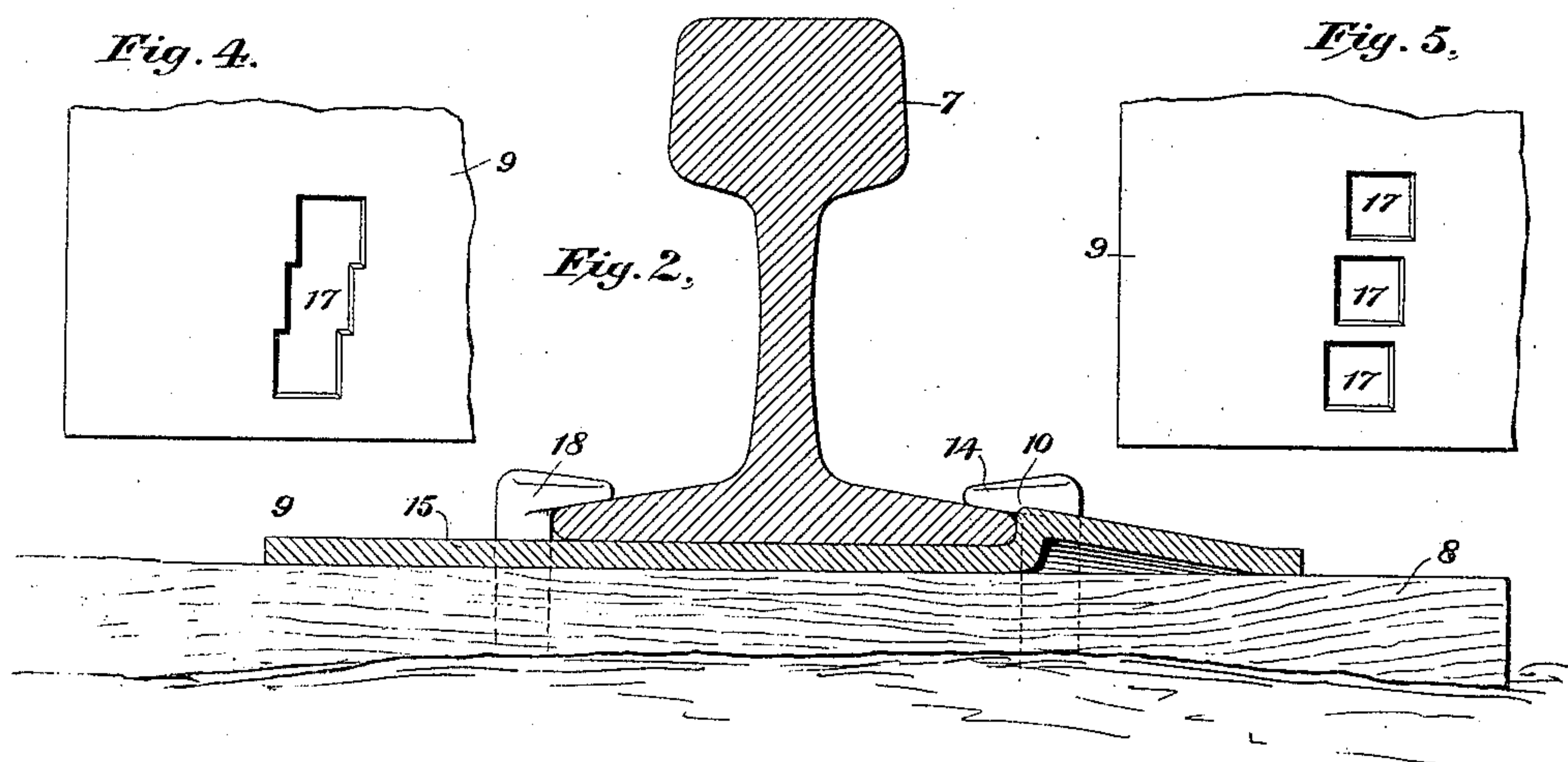
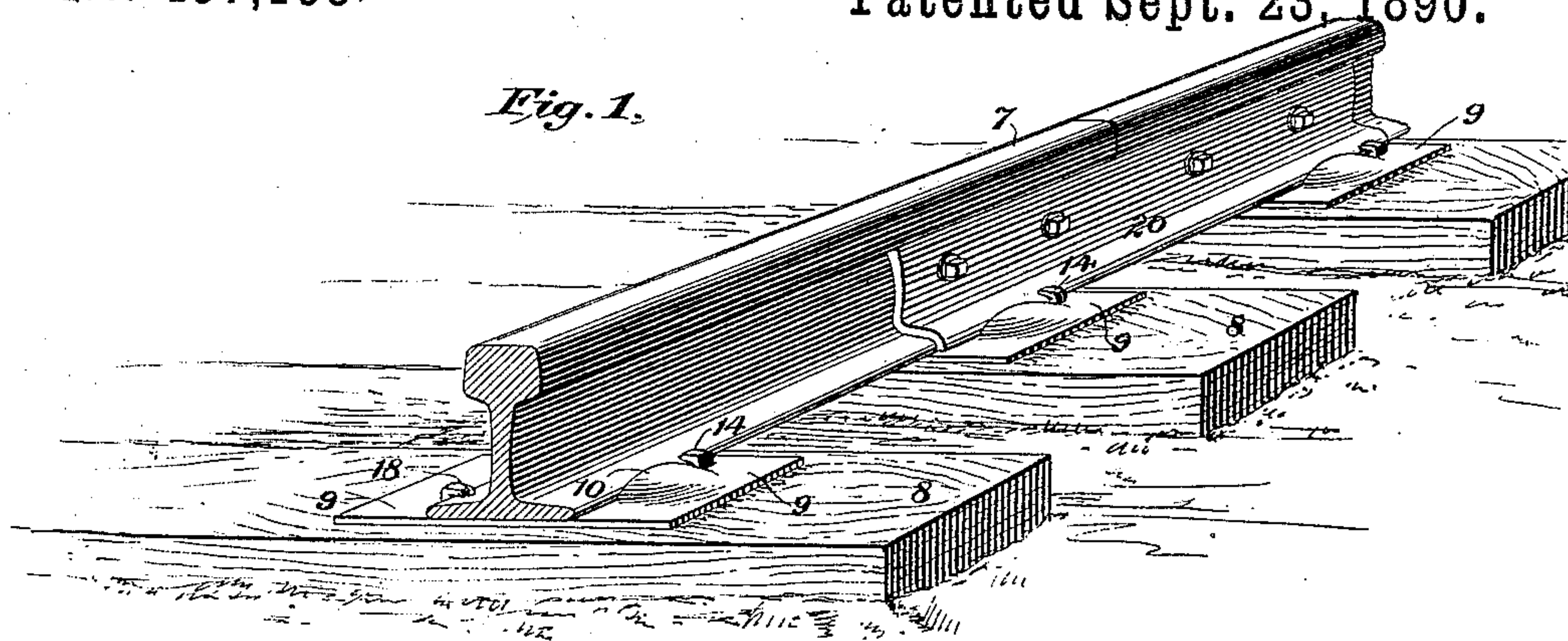


(No Model.)

C. D. HALSEY.  
RAILWAY TIE PLATE.

No. 437,153.

Patented Sept. 23, 1890.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## RAILWAY-TIE PLATE.

SPECIFICATION forming part of Letters Patent No. 437,153, dated September 23, 1890.

Application filed June 11, 1890. Serial No. 354,999. (No model.)

*To all whom it may concern.*

Be it known that I, CHARLES D. HALSEY, a citizen of the United States, residing at Newark, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Railway-Tie Plates, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a railway-tie plate adapted to be placed between the rail and tie for preventing the cutting away of the tie by the rail and for receiving the lateral thrust of the rail in order to hold the same more securely in position and obviate the cutting away of the rail-spikes by the rail.

The principal object of my invention is to provide a very simple form of tie-plate, which may be used readily with a rail or rails having bases of different width. A further object of the invention is to cheapen the manufacture of these plates.

I have illustrated my invention and its application in the accompanying drawings, in which like numbers of reference designate like and corresponding parts throughout, the drawings being as follows:

Figure 1 is a perspective of a portion of a railway embodying my invention. Fig. 2 is an enlarged vertical sectional view taken on a plane transversely of the rail, as indicated by line 2 2 in Fig. 3. Fig. 3 is a top plan view of my improved plate. Figs. 4 and 5 show different forms of the obliquely-arranged rail-spike opening located upon the flat portion of the plate opposite the projection thereof, as hereinafter fully explained.

Referring to the drawings, 7 designates an ordinary rail, and 8 the ordinary cross-ties of a railway, upon the upper face of which is secured my improved tie-plate 9, which is interposed between the bottom of the rail and the tie.

My improved plate 9 consists, essentially, in a plate having one end of the upper face thereof formed with a projection or shoulder 10, which extends over a considerable por-

tion of the width of the plate, so as to furnish an extended and solid bearing and brace portion for the rail in its lateral movement.

At one side of the shoulder 10 is formed a spike opening 11, the sides of which, as clearly indicated in the drawings, are beveled downwardly, so that the inner edge 12 of such opening is offset from or lies out of line with the face 13 of the projection 10, with which the base of the rail engages and bears against in its lateral thrusting. The purpose in having the spike-opening 11 offset from the line of contact 13 between the rail-base and the bracing-shoulder 10 is to prevent the base of the rail from making contact with the neck of the spike 14, set in the opening 11, and the lip of which engages the horizontal portion of the rail-base. This non-contact of the rail-base with the neck of the spike 14, as clearly shown in Fig. 2, prevents the side thrust of the rail from rubbing against this portion of the spike and cutting it away, thereby greatly increasing the life of the spike.

The other end 15 of the upper face of the plate 9, and in fact the entire upper face of the plate located between the meeting face 13 of the projection 10 and the remote edge 16 thereof, is formed without projections, or plain and preferably flat, so that the plate may be placed in position between the rail and tie by merely raising the rail a sufficient distance to admit the thickness of the plate between the same and the tie, and sliding the flat portion 15 of the plate under the rail until the face 13 of the projection 10 meets the edge of the rail-base. In this way rails that have been spiked down in the ordinary way may be equipped with my improved plate with very little trouble, it only being necessary to spring the rail upward sufficiently to admit of the flat portion of the plate being slid under the rail.

The flat or plain portion 15 of the plate is provided with one or more spike-openings 17 for receiving a spike 18, which, together with the spike 14, serves to hold the plate to the tie and the rail to the plate, and at the same time acts to hold the rail laterally and firmly pressed against the meeting face 13 of the projection 10. The spike opening or open-



ings 17 are arranged on a line oblique to line 13, as will be clearly understood from Figs. 3, 4, and 5, and is preferably located diagonally opposite the opening 11. This obliquity of the spike opening or openings 17 permits of the plate being readily used with rails having bases of different widths, and also compensates for the varying width of the base of the same rail. For instance, in using the plate with a rail the base of which would be of a width equal to the distance from the meeting face 13 of the projection 10 to a point 19, the spike 18 would in this instance be placed at the end of the opening 17 nearest the center of the plate, so as to hold the rail firmly against the projection 10. In the case where the plate is used with a rail having a base of a greater width than that just referred to, the spike 18 would obviously be driven in the opening 17 at a point farther away from the end of the opening near the center of the plate than in the aforesaid instance, in order to accommodate a greater width of base. As the base of a rail is rarely of uniform width throughout its length, this feature of having the rail-spike opening or openings 17 disposed on a line oblique to the face 13 of projection 10 will be of great advantage, for the reason that by virtue of the arrangement of the opening 17 the spikes 18 of the plates on the different ties may be placed at a greater or less distance from the projection 10, accordingly as the width of the rail-base be greater or less, as will be readily understood from Fig. 1, wherein is shown a rail provided at each tie with one of the plates, it being my intention to use the plate at every tie in the railway, or at as frequent intervals as may be desired. This capacity of the plate to accommodate varying widths of rail-base enables me to as firmly secure a rail to a tie at one point of its length as at another and thereby to secure the greatest possible stability of the rail.

Instead of having one large spike-opening 17 of rectangular shape, as is shown in Fig. 3, the same may be modified by having it constructed in a stepped form, as in Fig. 4, or in a divided form, as in Fig. 5.

The plate may of course be made by either casting it with a suitable projection 10 upon one end thereof and the openings 11 and 17, or it may be made of wrought-iron or other material, with the projection 10 struck up thereon and the spike-openings 11 and 17 punched or cut in the plate.

In using the plate I place it, as shown in the drawings, so that the projection 10 lies in engagement with the outer edge of the rail-base. Since the thrust of the rail which tends to cut the necks of the spikes is the outward thrust, it will be seen that there is practically no cutting of the rail-spikes 18 located upon the inner side of the rail. One projection, such as 10, located upon one end of the plate will suffice, and, moreover, by virtue of having only one such projection and of having the

rest of the plate flat, it is easier to place the plates in position between the rail and the ties, for the rail only has to be raised a very slight distance to adjust the plates. In Fig. 1 two of the plates 9 are shown as being used in conjunction with a fish-plate 20, which comes between the rail-base and the shoulder 10 of the plates and is engaged by the spikes 14. Since the plate has the capacity of accommodating different widths of rail-base, it may be readily used with such a fish-plate by placing the spike 18 in the opening 17 at a greater distance from the shoulder 10.

Having thus described my improvements in railway-tie plates, what I claim as my invention, and desire to secure by Letters Patent, is—

1. A railway-tie plate adapted to be placed between the rail and the tie and secured to the latter, consisting in a plate having one end of its upper face formed with a projection or shoulder for engagement with the rail-base, and receiving the lateral thrust of the rail, and having the other end of the upper face of the plate formed without projections or smooth, and provided with one or more rail-spike openings disposed obliquely to the line of contact between the said projection or shoulder and the rail, whereby the tie-plate may be used with rails having bases of varying widths, substantially as set forth.

2. A combined railway-tie plate and spike-protector adapted to be placed between the rail and tie, consisting in a plate provided at one end of its upper face with a projection or shoulder for engaging with the rail-base and receiving the lateral thrust of the rail, and also provided at such end with a rail-spike opening offset from the line of contact between the rail-base and the said projection or shoulder to prevent contact between the neck of the spike and the rail-base, and having the other end of the upper face of the plate formed without projections or flat, and provided with one or more rail-spike openings disposed on a line oblique to the line of contact between the rail and the said projection or shoulder, substantially as and for the purpose set forth.

3. A railway-tie plate adapted to be placed between the rail and tie, consisting in a plate provided at one end with a shoulder or projection 10 and a rail-spike opening, and having the other end thereof formed flat or without projections, as at 15, and provided with one or more openings 17 arranged obliquely to the line on which the rail-base makes contact with the projection 10, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 9th day of June, 1890, in the presence of two subscribing witnesses.

CHAS. D. HALSEY.

Witnesses:

CHAS. D. FOWLER,  
WILLIS FOWLER.