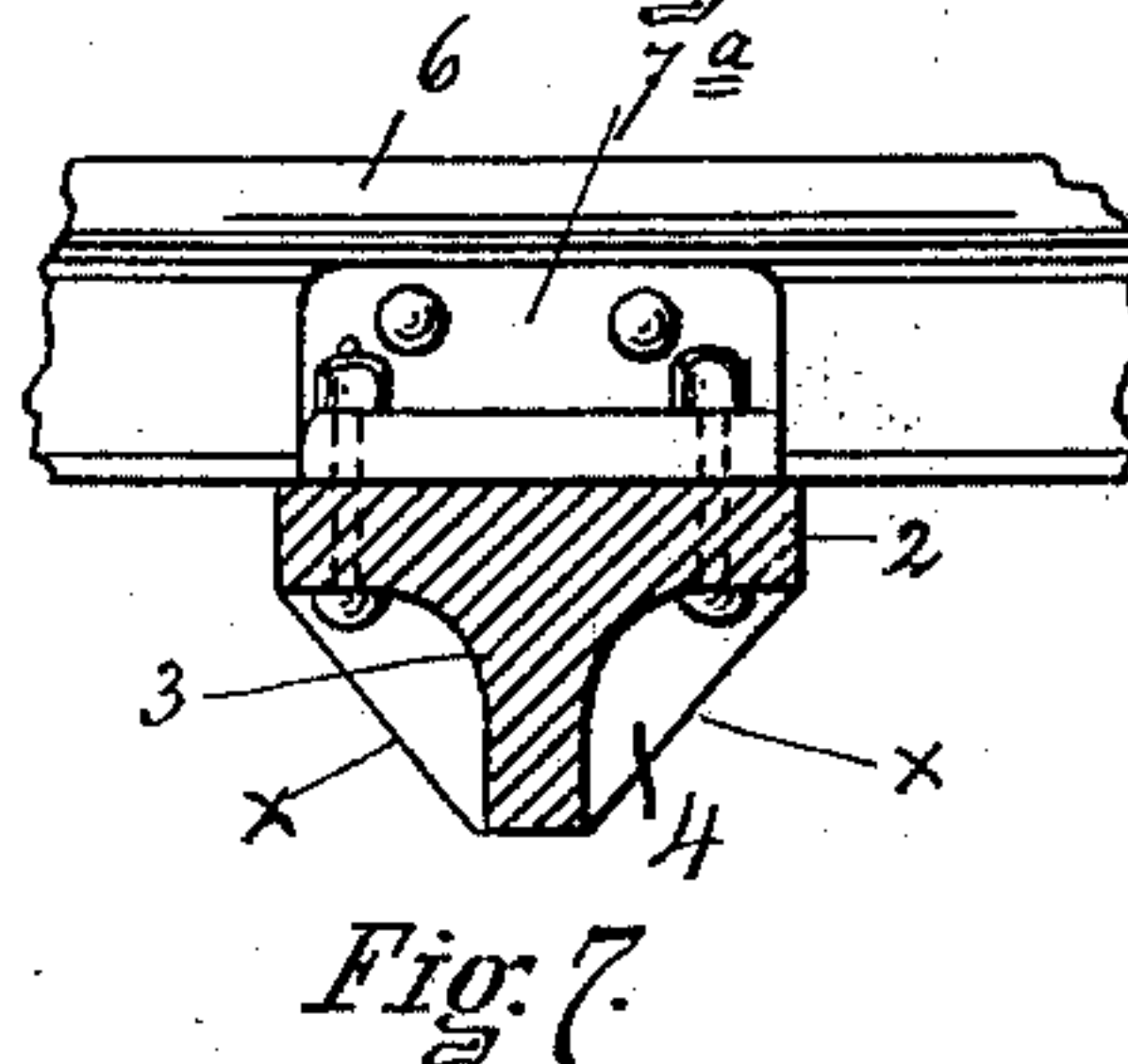
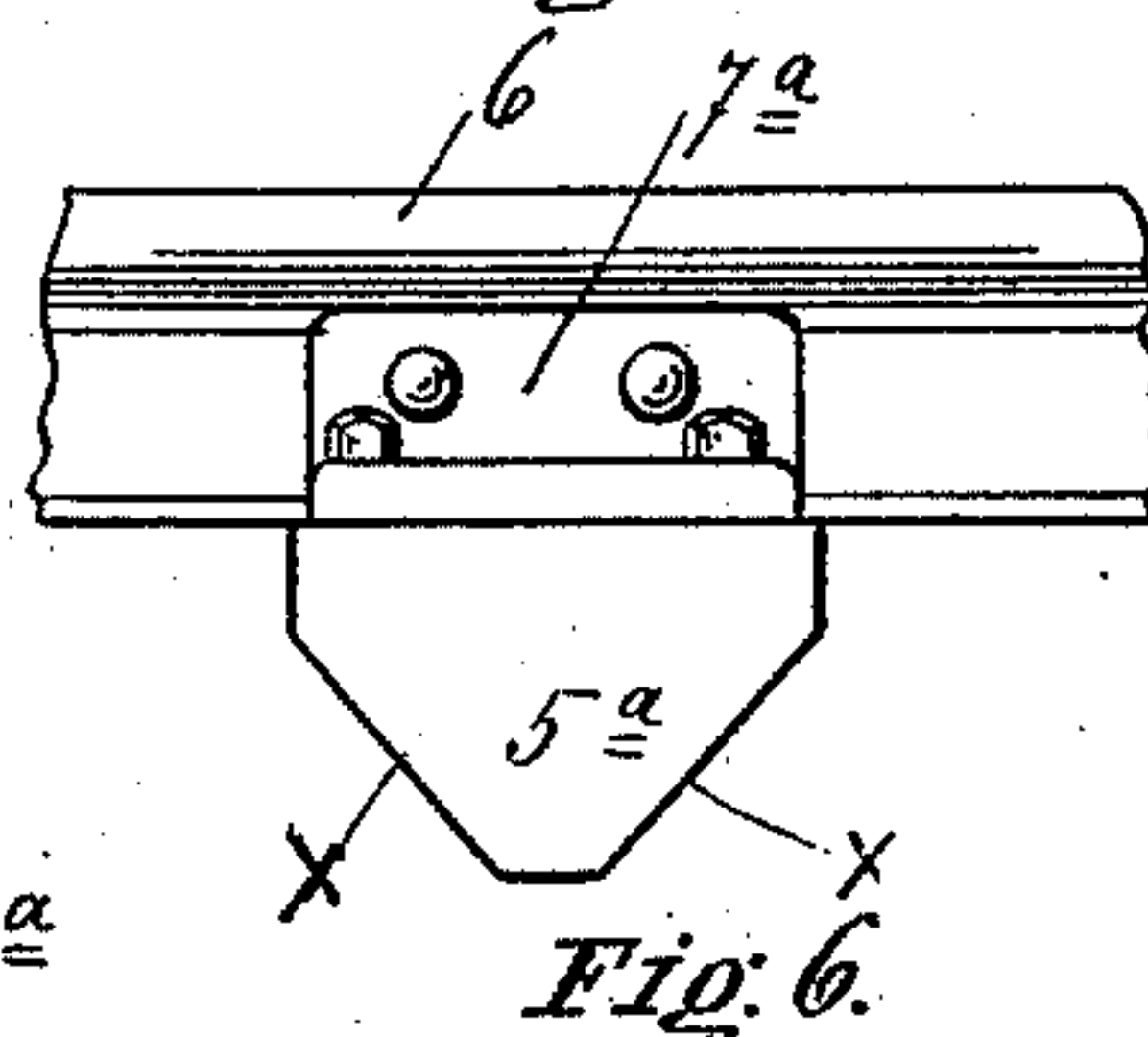
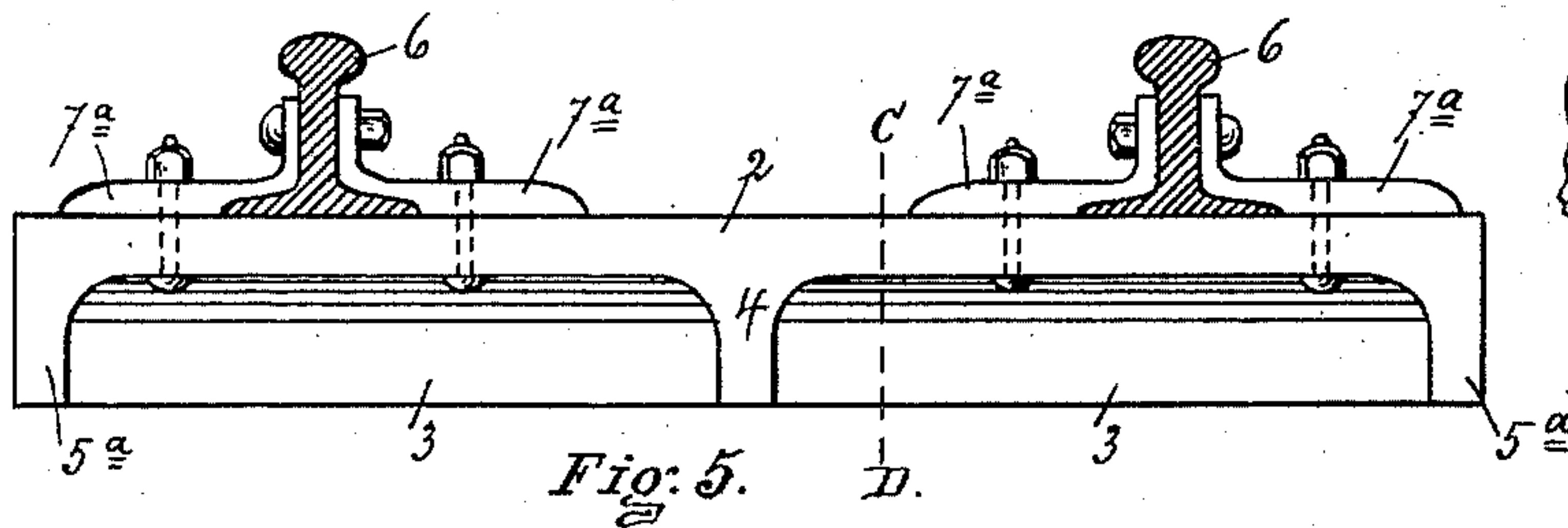
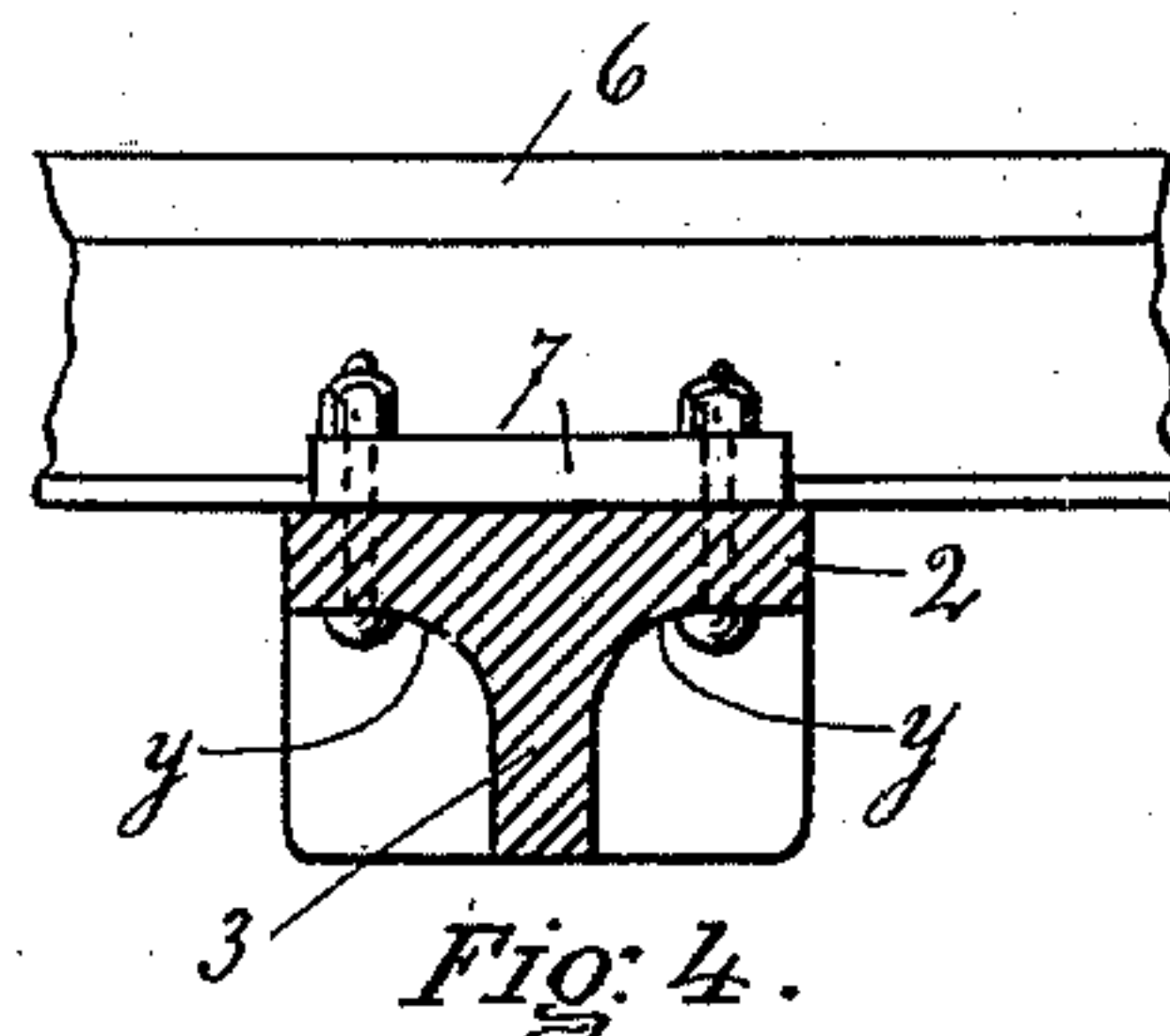
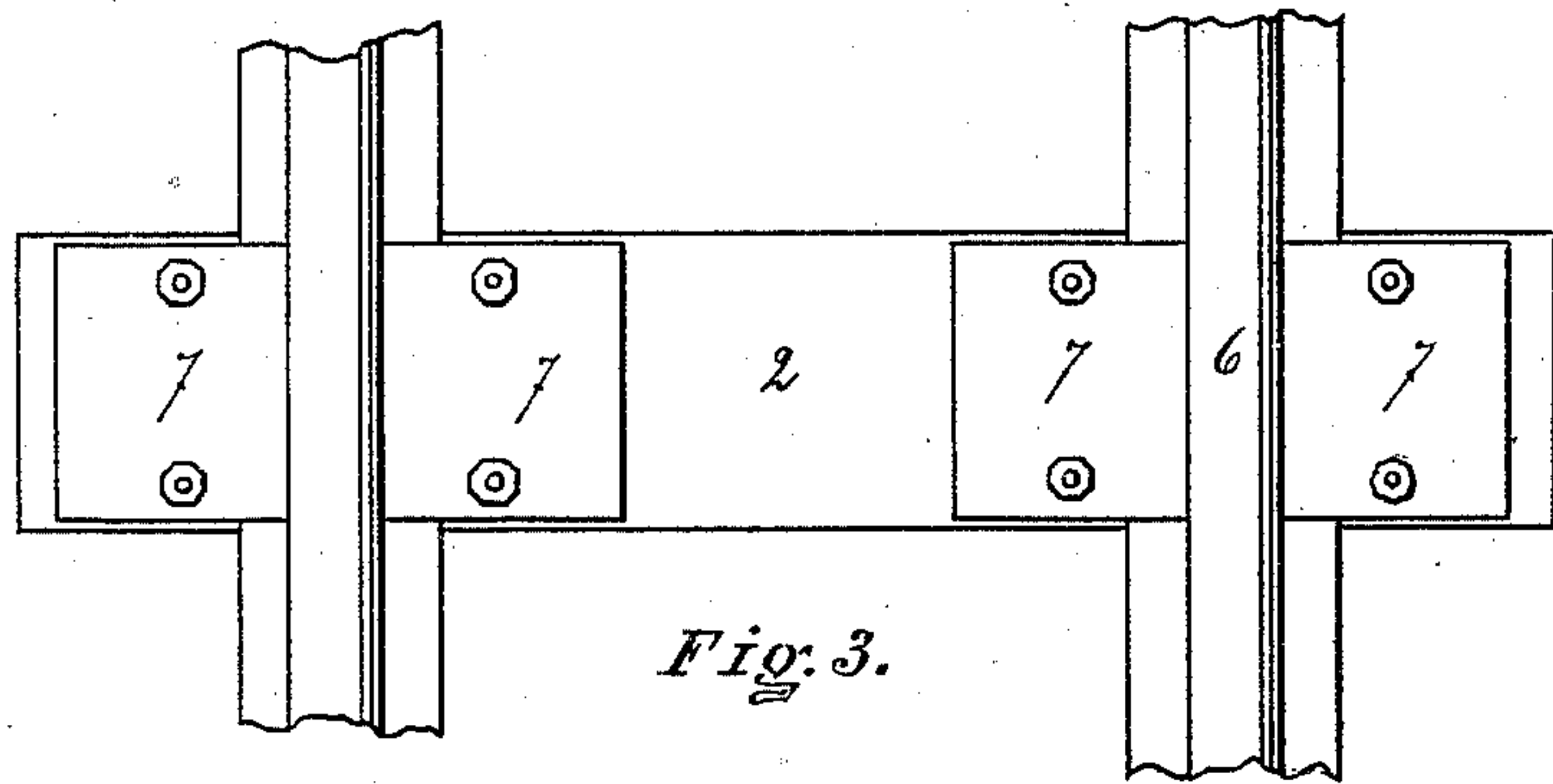
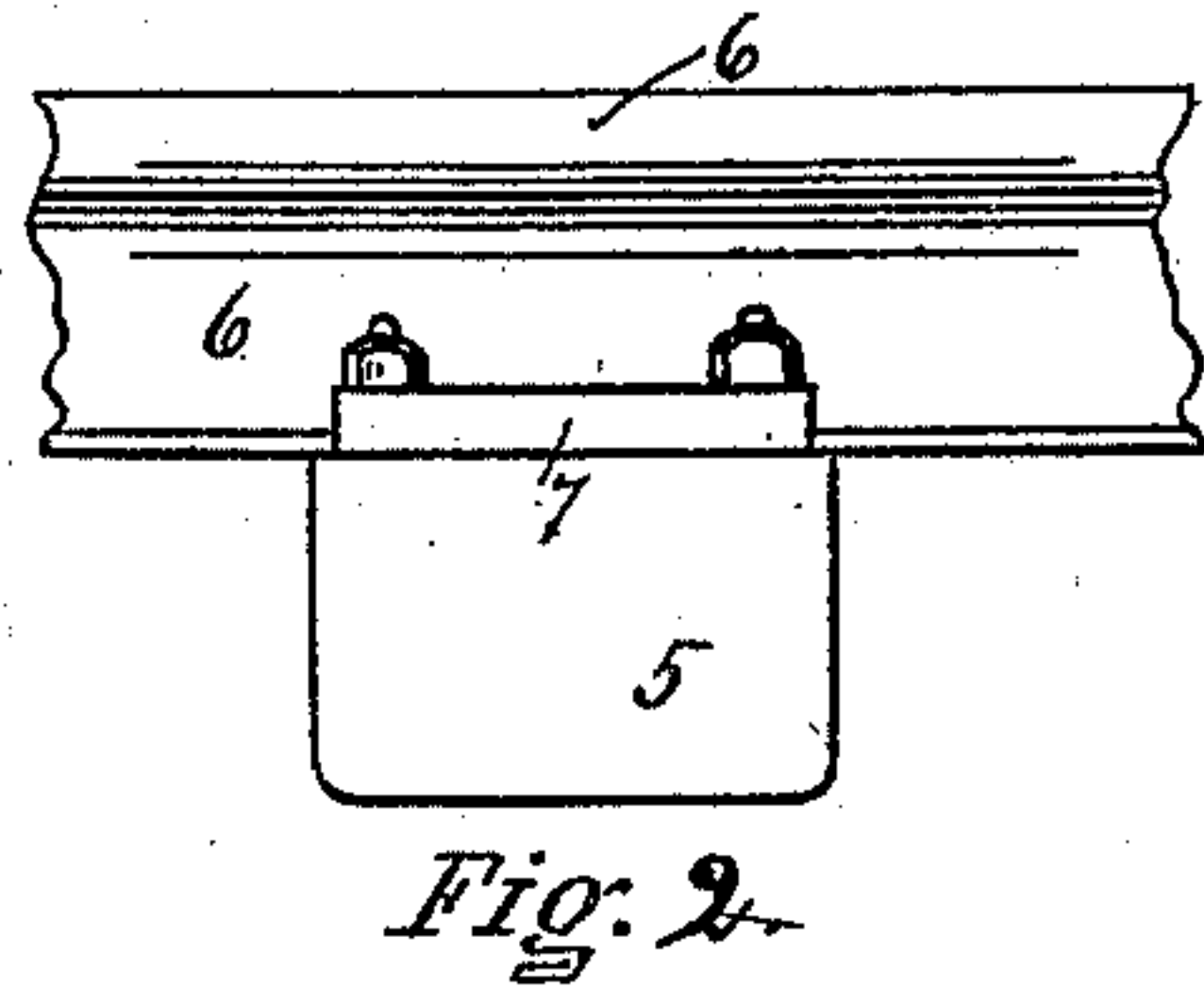
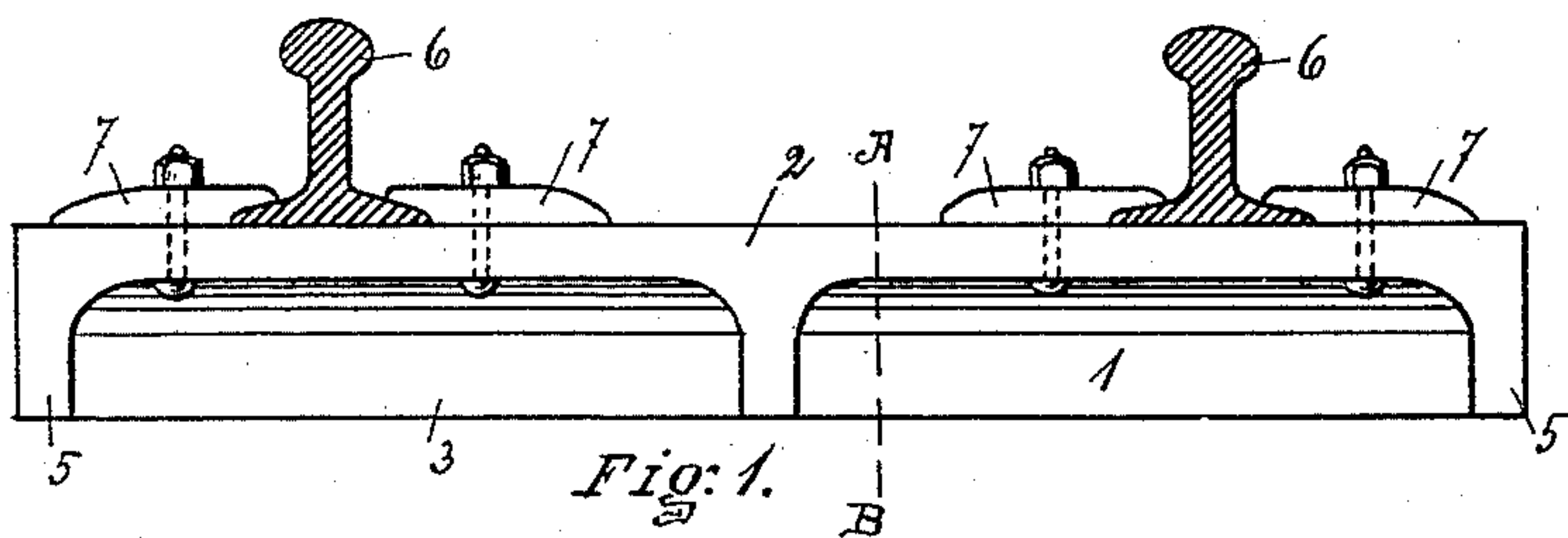


(No Model.)

O. M. KNOX.
RAILWAY TIE.

No. 473,934.

Patented May 3, 1892.



WITNESSES.

Rich. A. George.

McRobinson

INVENTOR.

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By Wisly Perry
Atty

UNITED STATES PATENT OFFICE.

ORVILLE M. KNOX, OF ONEIDA, NEW YORK.

RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 473,934, dated May 3, 1892.

Application filed December 23, 1891. Serial No. 415,935. (No model.)

To all whom it may concern:

Be it known that I, ORVILLE M. KNOX, of Oneida, in the county of Madison and State of New York, have invented certain new and useful Improvements in Railway-Ties; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form part of this specification.

My invention relates to an improvement in railway-ties, and more especially to an improvement on the railway-ties shown in the Letters Patent No. 462,716, issued to me.

In the drawings which accompany and form a part of this specification, and in which similar letters and figures of reference refer to corresponding parts in the several figures, Figure 1 shows a side elevation of a tie and cross-section of a pair of rails mounted thereon. Fig. 2 shows an end view of the tie and a section of rail mounted thereon. Fig. 3 shows a plan view of the device shown in Fig. 3. Fig. 4 shows a cross-section on a line A B of Fig. 1. Fig. 5 shows a modified form of tie and rails with a modified form of rail-fastenings. Fig. 6 shows an end view of the tie and devices shown in Fig. 5. Fig. 7 shows a cross-section on line C D of Fig. 5.

Referring more specifically to the reference letters and numerals for a more particular description of the device, 1 indicates the tie formed of metal with surface plate 2, having a downward-projecting central flange 3 formed integral therewith and having the angle between the surface plate and flange filled and rounded, as shown at *y*, and having central projecting fins or webs 4 4, which may project downward in the full width of the surface plate, or which may gradually taper toward the lower edge of the flange, as shown at *x*. The tie is provided at each end with a

vertical wall 5, which may be rectangular, as shown in Figs. 1 and 2, or tapered, as shown at 5^a in Figs. 5 and 6. The angles between the webs and surface plate and the walls and surface plate are also filled and rounded. The rails 6 6 are mounted on the upper surface of the tie and secured by clamps 7, as shown in Figs. 1 and 2, or 7^a, as shown in Figs. 5 and 6.

In use the tie is preferably embedded in the earth up to the surface plate 2, and the earth can be filled into the space and solidly tamped by reason of the filled and rounded corners, so that there is no danger of the tie afterward settling by reason of the earth working into spaces beneath the tie not fully filled at the time of tamping. The end walls prevent the earth from working out from under the tie, and especially so when the earth surrounding the end of the tie is washed away or becomes lower than the surface of the tie. The webs 4 4 prevent the tie from working endwise, and also perform the function of dividing the bearing-face of the tie into divisions which retain the earth and distribute the weight more satisfactorily.

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

1. The herein-described railway-tie, having surface plate 2, downwardly-projecting central integral flange 3, ribs 4 4, and end walls with the angles between the flange and surface plate and walls and surface plate filled and rounded, as set forth.

2. The herein-described railway-tie, having surface plate 2, downwardly-projecting central flange 3, and end walls with the angles between the flange and surface plate and walls and surface plate filled and rounded, as set forth.

In witness whereof I have affixed my signature in presence of two witnesses.

ORVILLE M. KNOX.

Witnesses:

JOSIAH PERRY,
M. E. ROBINSON.