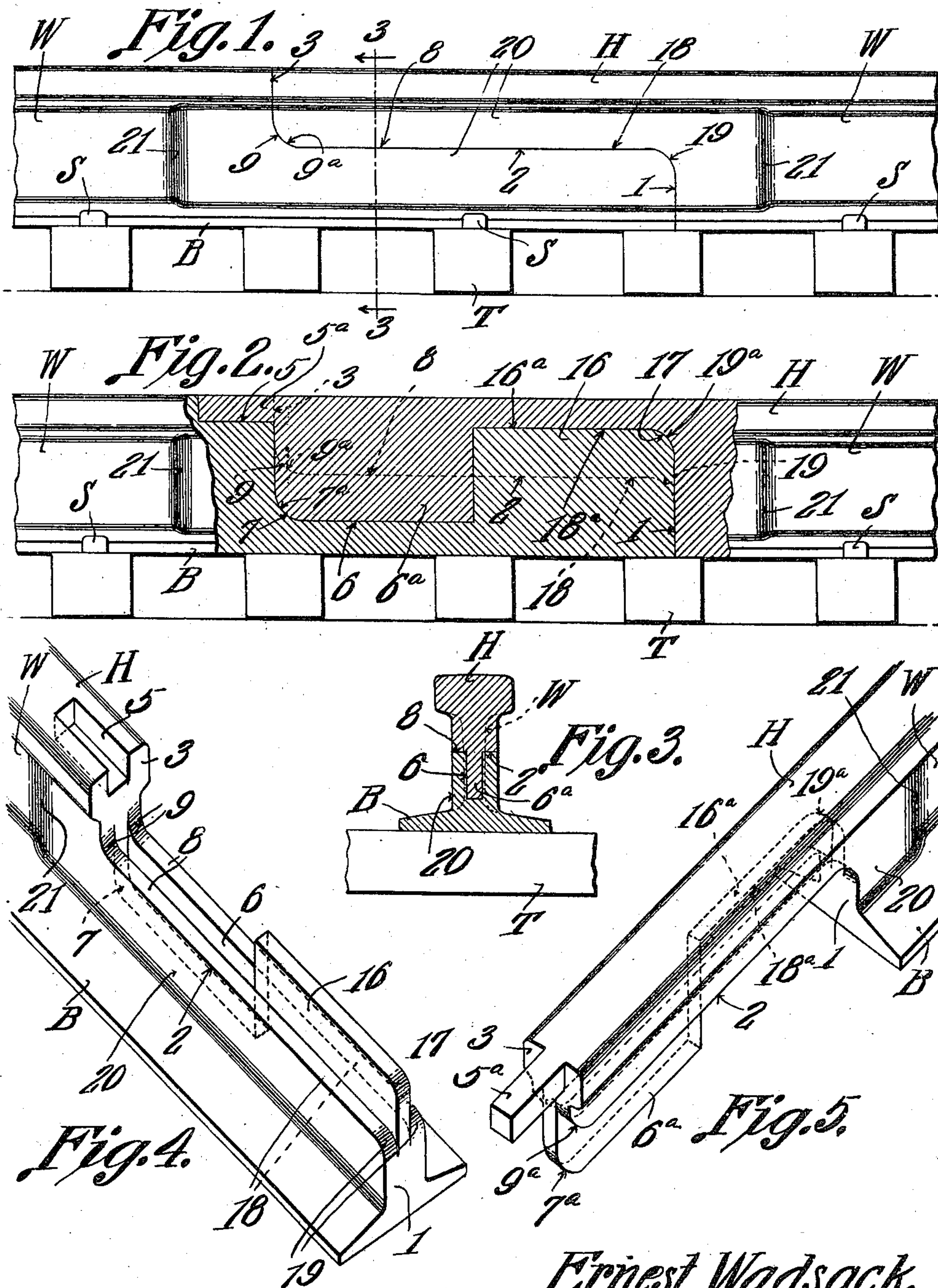


E. WADSACK.
RAIL JOINT.
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989,454.

Patented Apr. 11, 1911.



Witnesses

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ERNEST WADSACK, OF HUTCHINSON, KANSAS.

RAIL-JOINT.

989,454.

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To all whom it may concern:

Be it known that I, ERNEST WADSACK, a citizen of the United States, residing at Hutchinson, in the county of Reno and State of Kansas, have invented a new and useful Rail-Joint, of which the following is a specification.

This invention relates to railway joints, more especially those having web blocks; and the object of the same is to improve a rail joint of this type.

To this end the invention consists in the specific details of construction hereinafter more fully described and claimed, and as shown in the drawings wherein—

Figure 1 is a side elevation of the meeting ends of two rails embodying this type of joint. Fig. 2 is a central longitudinal section thereof. Fig. 3 is a cross section on the line 3—3 of Fig. 1. Fig. 4 is a perspective view of the left hand rail of Fig. 1, and Fig. 5 is a perspective view of the right hand rail thereof.

In the drawings the letter B designates the base, W the web, and H the head of an ordinary rail, such as now in common use, and T are the ties to which these rails are spiked by spikes S in the ordinary manner.

The present invention consists in so shaping the meeting ends of two rails that they may be connected with each other without the use of any bolts, fish plates, or other fastening devices, and that the spikes which attach these rail ends to the ties will hold the rails both attached thereto and in true alinement with each other and permit expansion and contraction to a limited degree.

Coming now to the details of my present invention, the body of the rail is cut through the base B upward on a line 1, thence horizontally on a line 2 through the web W, and thence upward on a vertical line 3 through the head H, so that in side elevation this improved joint has the appearance shown in Fig. 1. The end of the head H of the left rail has in its tread a socket 5 opening upward and outward through the extremity of the rail, and the extremity of the right rail R has a tenon 5^a projecting from it and of a size to fit into said socket. The function of this part of my invention is to accurately aline the tread portions of the rails so that the wheels will travel thereon without the "click" which is so often heard as they pass over the meeting ends of rails now in common use. The longi-

tudinal cut 2 through the web W is rather long, as will be seen by the fact that this rail joint laps several ties T, and in the upper edge of the web of the left rail near its vertical extremity 3 is formed a groove 6 which is preferably about one-half inch wide, or one-third of the width of the thickness of the web of the joint; while the companion or right hand rail has a depending fin 6^a of a width to fit snugly within said groove and of a length slightly less than the length of the groove. The inner end of the groove adjacent the extremity 3 is rounded as at 7, and the outer extremity of the fin is rounded off as at 7^a. In similar manner the walls 8 of this groove are rounded at their ends as at 9, and the shoulders at either side of the outer end of the fin are rounded at their extremities as at 9^a.

From the outer end of the groove 6 to the outer extremity 1 of the left rail, there is formed upon the cut away section of its web W a fin 16 rising therefrom and of a thickness of about one-half inch, or one-third of the thickness of the web of the joint, its outer extremity being rounded as at 17, and upward into the upper half of the web of the right rail is similarly formed a groove 16^a whose walls 18^a are rounded at their inner extremities as at 19^a to correspond with the rounded ends 19 of the walls 18 of the left rail where they pass alongside the fin 16.

I do not wish to be limited to the manner in which rail ends of this character are made. I find by experiment, however, that they can be rolled by the use of suitable machinery, or that they may possibly be stamped from dies. It will be clear that no bolt holes or tooling are necessary, and no bolts or fish plates need be employed in connecting the meeting ends of rails which are shaped in this manner. In order to connect them the left hand rail end in the present instance is first laid upon the tie, then the right hand rail end is brought into position above it and borne downward. This presses the fin 6^a into the groove 6 and simultaneously causes the groove 16^a to pass over the fin 16, while meanwhile the tenon 5^a drops into the socket 5. As each fin is slightly shorter than its corresponding groove, it is clear that when the rails contract a certain lost motion longitudinally is permitted, and this motion will draw the tenon a little out of the socket 5 without exposing enough

opening at the end of the latter to permit the disagreeable noise made by car wheels in passing over a rail joint of the usual type. This improved rail joint permits expansion
 5 and contraction laterally to a slight extent without necessarily causing one rail end to bind within the other, and I have found by experiment that it will withstand the ravages of the weather without disagreeable re-
 10 sults. I attach importance to the fact that the grooves and fins are quite long, whereby the entire interlocking parts of the joint are caused to lap over several rails, so that after the second rail end is brought into place and
 15 dropped into the first, the spikes hold it in place therein and hold the first rail end upon the ties. By reason of its length, this joint will not settle or crack or depress a tie if a heavy train should come to rest upon it, and by
 20 reason of the fact that there are several spikes at the sides of the rail ends adjacent the joint, it will be impossible for the uppermost portion (the right hand rail end in the present instance) to rise out of place with
 25 respect to the left hand rail end, even though both rails should be considerably worn.

When my improved joint is formed between the meeting ends of rails whose webs
 30 W are of the ordinary thickness, it will be advisable to make the grooves and fins at least one-half inch in width and therefore the webs will have to be thickened. This I preferably accomplish by suitable means in the act of rolling the rails so as to make their

webs thicker, as shown at 20 in Figs. 4 and 35 5, the increased thickness extending back from the extremity of the rail to a distance perhaps three inches in rear of the joint itself, and then merging into the web W by a shoulder 21 on either side. 40

What is claimed is:

The herein described rail joint, comprising the meeting ends of two rails which are cut vertically upward through their bases, thence horizontally through their webs, and
 45 thence vertically upward through their heads, the tread of one rail having a socket opening out of the extremity of the tread, the upper edge of its web having a long groove, and beyond the said groove a long upstand-
 50 ing fin extending to the extremity of the base; and the extremity of the head of the companion rail having a tenon projecting therefrom and adapted to fit said socket, a long fin depending from its web and adapted
 55 to fit laterally in said groove but of less length than the groove, and between the inner end of this fin and the extremity of its base a groove in the lower edge of its head and its web slightly longer than the fin on
 60 the first-mentioned rail-end.

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

ERNEST WADSACK.

Witnesses:

W. F. RAMSAY,
 J. E. SHANE.