(No Model.)

L. C. ZOLLINGER & W. H. PATTEE.

JOINT FOR RAILWAY RAILS.

No. 526,212. Patented Sept. 18, 1894.

Fig. 1.

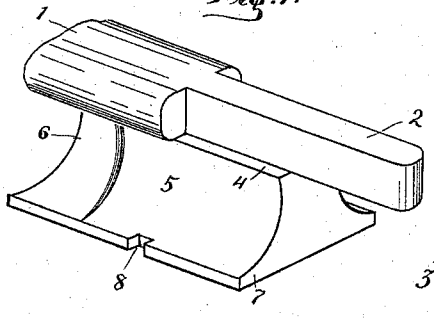


Fig. 2.

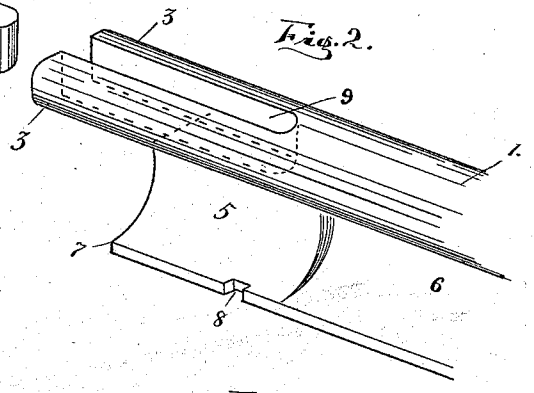


Fig. 3.

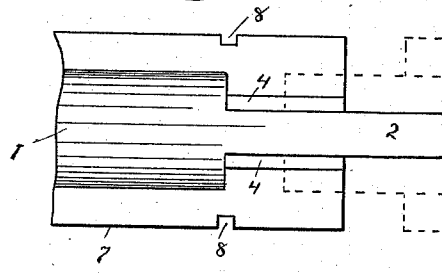
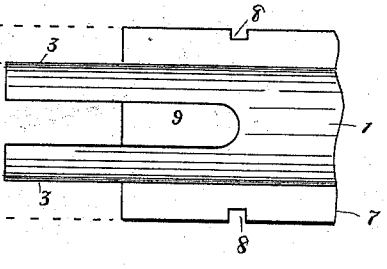


Fig. 4.



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UNITED STATES PATENT OFFICE.

LOUIS C. ZOLLINGER AND WILLIAM H. PATTEE, OF FORT WAYNE, INDIANA, ASSIGNORS OF ONE-THIRD TO HENRY C. ZOLLINGER, OF SAME PLACE.

JOINT FOR RAILWAY-RAILS.

SPECIFICATION forming part of Letters Patent No. 526,212, dated September 18, 1894.

Application filed April 30, 1894. Serial No. 509,443. (No model.)

To all whom it may concern:

Be it known that we, LOUIS C. ZOLLINGER and WILLIAM H. PATTEE, citizens of the United States, residing at Fort Wayne, in the county of Allen, in the State of Indiana, have invented certain new and useful Improvements in Joints for Railway-Rails; and we 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, which form part of this specification.

Our invention relates to improvements in rail-joints for railway rails.

The object of our invention is to provide a rail-joint for railway rails so constructed that the abutting ends or sections of the adjacent rails are adapted for a firm interlocking union, so united as to form practically one contiguous rail and an unbroken smooth surface, in order to avoid the jar and sensation incident to passing over the uneven joints of the railway-rails now in common use; and so arranged that while admitting of proper longitudinal movement due to expansion and contraction, are, when in position, secure against either lateral or vertical movement or displacement relative to each other, under the heaviest strains, and are adapted to avoid the expensive use of fish-plates, clamping-bolts, nut-locks, or other equivalent devices, and at the same time can readily be removed for repairs without disturbing the abutting or adjacent interlocking rails.

The novel feature of our invention consists in the construction by which a secure interlocking union is secured without the use of fish-plates or bolts and the advantages of a practically contiguous rail are secured.

In the drawings forming part of this specification similar figures or reference indicate corresponding parts throughout the several views.

Figure 1 is a perspective of the interlocking sections of our improved joint having the integral registering arm and lateral supporting shoulders. Fig. 2 is a perspective of the other section showing the parallel arms and slotted tread. Figs. 3 and 4 are plan views of Figs. 1 and 2 respectively, showing also in dotted outline the relative position of the parts when in engagement.

Our improved rail-joint is formed by a longitudinal extension of the ball of the rail at the end of one of the abutting sections, the said extension being centrally slotted and provided with the recess 9 which extends an equal distance to the rear of the end of the rail for the reception of the registering arm or tenon 2 of the other interlocking section. The parallel arms thus formed by the said slot and recess 9, which recess extends vertically only to the web of the rail, are supported at their rear end by the lateral enlargements 5 of the web 6 upon both sides of the rail, Fig. 2, and have their free projecting ends supported by the lateral shoulders 4 upon both sides of the registering arm 2 when in position, the said shoulders being formed by a like lateral enlargement 5 of the web 6, Figs. 1 and 3. The said registering or interlocking arm or tenon 2, whose upper surface is in alignment with the tread of the rail, is adapted to register with the slot 9, and is preferably about six inches in length, and is of the same vertical thickness of the said arms 3, the rear half of its length being supported by the web of the rail and the free end rests upon the web of the abutting rail in the slot 9, Figs. 3 and 4. The foot 7 of the rail is made in the usual manner and is provided with proper vertical slots 8 for securing the rails to the cross-ties.

It is obvious from the above description that the upper surface of the parallel arms 3 and the registering tenon 2 are at all times, when in position, in perfect alignment with the tread of both of the abutting rails, thus forming practically one uniform smooth tread surface.

The manner of using our improved interlocking rail-joint for rail way rails thus described is as follows: When the said abutting rails are placed in position and in engagement, proper allowance being made for a limited longitudinal movement of said rails thus connected, caused by expansion and contraction, the registering arm or tenon 2 will then be in engagement with the said parallel arms and the said slot 9, its lower surface resting

upon the web of the abutting rail and its upper surface being in alignment with the tread of the engaging rail, thus forming one even surface, and when the ends of the abutting rails are thus arranged either lateral or vertical displacement or disarrangement of the abutting sections is impossible under all circumstances, as they will be securely locked, and longitudinal displacement is prevented by the holding spikes in the slots 8, thus avoiding the necessity of fish plates, bolts or nut-locks.

When it is desired to remove one of the said rails forming our improved joint for repairs or other purpose, it is apparent that it can readily be done without in the least interfering with the abutting rails with which said rail is interlocked, in the following manner: The said rails are so placed as to allow for maximum expansion, which will thus leave a space between the abutting ends thereof at each joint and when the said spikes are all removed the operator can by pushing or crowding the said rail lengthwise the distance of one of the said spaces readily raise the other extremity from the cross-ties, as the interlocking arm 2 will then be out of engagement with the web 5 in the slot 9 and the parallel arms 3 will be free from engagement with the lateral shoulders 4, and the other extremity can then be readily disengaged in an obvious manner. It is apparent that in placing the said rails in position upon the said cross ties when forming our improved rail-joint a proper allowance of space at each of the said joints must be made to permit of this removal, in the manner above described. It is also evident that the said spaces at each end of the said joints when in position will not cause any jar, as the said spaces are so bridged over by the registering arm or tenon 2 as to form one contiguous and even surface or tread in perfect alignment throughout.

It is apparent that the use of our improved rail-joint in no wise weakens the rail for the abutting portions are strengthened by the said lateral enlargement of the web.

Having thus briefly described our invention and the manner in which the same is to be applied, what we desire to secure by Letters Patent is—

1. A rail-joint for railway rails consisting of two sections of rails adapted for an interlocking engagement, the interlocking end of one of said sections having a forwardly extended and longitudinally slotted ball or tread, as shown, forming two parallel arms strengthened and supported by the laterally enlarged web of the abutting section, the abutting or interlocking end of the other section having a laterally enlarged web forming lateral shoulders to support the free projecting ends of the said parallel arms, and having a forwardly extending registering arm adapted to form a locking engagement with the said parallel arms having its free end supported by the web of the abutting rail, all substantially as described.

2. The combination of two abutting rails, one having one end provided with a laterally enlarged and shouldered web and a forwardly projecting and registering arm adapted to be supported throughout its length by the webs of the abutting sections, the other rail having one end provided with parallel arms and a slotted tread, adapted to form a locking engagement with the said registering arm and lateral shoulders, the said arms being supported by the laterally enlarged web of the abutting rail, all substantially as described.

Signed by us, at Fort Wayne, this 26th day of April, A. D. 1894.

LOUIS C. ZOLLINGER.
WILLIAM H. PATTEE.

Witnesses:
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