

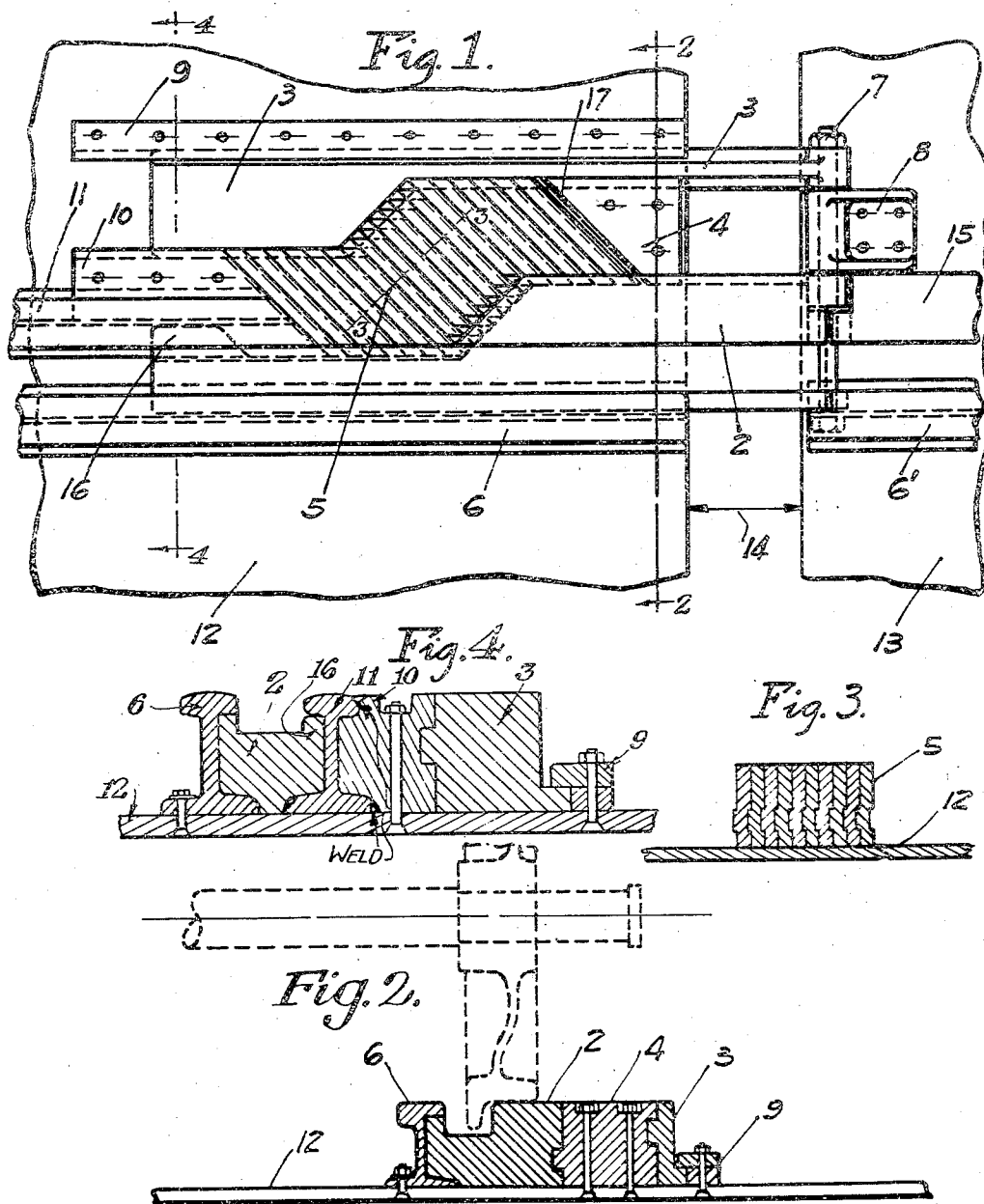
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RAIL EXPANSION JOINT

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RAIL EXPANSION JOINT

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2 Claims. (Cl. 238—228)

This invention relates to a rail expansion joint in which a continuous rail tread is formed in the space between the rail ends, this space being continually decreased or increased in length due to the expansion or contraction of the rails. This expansion and contraction of the rails may be due to changes in temperature or in the case of the rails at the end of a long span bridge this movement may be caused by the deflection of the bridge under live load.

This invention consists of certain features of construction and in the combination and arrangement of the several parts to be hereinafter fully described and illustrated in the accompanying drawing, wherein like characters denote like or corresponding parts in the several views, and in which:

Figure 1 is a top view of this rail expansion joint.

Figure 2 is a vertical section on line 2—2 of Fig. 1.

Figure 3 is a vertical section thru the laminations on the line 3—3 of Fig. 1.

Figure 4 is a vertical section thru the rail joint on the line 4—4 of Fig. 1.

In the drawing one rail joint only is shown. For a complete track installation it will be necessary to have another joint in the other rail, similar to the one shown, but to the opposite hand.

The base plate 12 is considered to be fixed in location, and on a bridge would be fastened to the abutments, while base plate 13 is a part of the bridge span, and moves to either open or close the gap shown at 14, depending upon the contraction or expansion of the bridge. The running rail consists of the rail 11 which is fastened to the base plate 12 by the filler block 10, the grooved rail 2 which slides on the base plate 12, and the rail 15 which is fastened to the grooved rail 2 and the base plate 13. The sliding rail 2 has an oblique vertical end face as shown, and the grooved portion of the rail is extended to engage the rail 11 by lug 16. Lug 16 slides back and forth under the head of rail 11 and serves to guide the end of rail 2. The end of rail 11 has an oblique face and the space formed between this face and the oblique face of the rail 2 is filled by a number of vertical laminations 5, which are supported on the base plate 12, and have their top surfaces flush with the running surface of the rails 11 and 2. These laminations are set obliquely and are parallel to the end face of rail 11, there being enough laminations to extend along the outside edge of sliding rail 2. The laminations are provided with horizontal

splines as shown in Figure 3, so that the laminations will act together as a unit to sustain the vertical wheel loads. Block 4 is fastened to the base plate 12, and serves to retain the laminations 5. Parts 17 are shim plates for adjustment. Part 3 is a laterally offset extension to the movable rails 2 and 15, which slides on the base plate 12 in the grooved guide 9. The offset extension 3 has an inwardly offset oblique vertical face as shown, which is parallel to the oblique end face of the rail 2, and acts on the outside ends of the laminations to slide them into place between the oblique end faces of the rails 11 and 2. It is also to be noted that the offset extension 3 serves to back up the laminations in all positions of the movable rail, against the outward thrust of the wheels as they travel over the laminations. Part 6 is an inside guard rail which is fastened to base plate 12 and acts as a guide for movable rail 2. Part 6' is a continuation of the guard rail on the bridge and is fastened to the base plate 13.

It is thought from the foregoing description that the advantages and novel features of the invention will readily be apparent.

It is understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes come within the scope of the appended claims.

Having thus described my invention, what I claim as new is:—

1. A rail expansion joint comprising the meeting rail ends, a base plate for supporting said rail ends, said rail ends being each cut obliquely and their end faces lying in non-parallel oblique vertical planes, one rail end being fixed to the base plate, the other rail end being slidably movable with respect to both the base plate and the fixed rail end, means positioned between the rail ends and supported on the base plate to form a continuous rail tread, said means comprising vertical laminations positioned parallel to the oblique face of the fixed rail end and substantially filling the space between the rail end faces; and guide means for the said laminations, said guide means consisting of horizontal splines in the said laminations so that vertical loads will be carried by a group of laminations acting together to form a continuous rail tread, and means for maintaining adjacent laminations in contact one with another and parallel with said oblique face of the fixed rail end, certain of said laminations being maintained in alignment with the meeting rails whereby a rail tread is formed.

2. A rail expansion joint comprising the meeting rail ends, a base plate for supporting said rail ends, said rail ends being each cut obliquely and their end faces lying in non-parallel oblique vertical planes, one rail end being fixed to the base plate, the other rail end being slidably movable with respect to both the base plate and the fixed rail end, vertical laminations parallel to the oblique face of the fixed rail, positioned between the oblique faces of the rail ends and also on the outside edge of the movable rail, retaining and operating means for the said laminations such that the space between the oblique vertical faces of the rail ends will be substantially filled

by the said laminations for all positions of the movable rail, to form a continuous rail tread; said means consisting of a laterally offset extension to the movable rail having an inwardly offset oblique vertical face which is parallel to the oblique vertical end face of the before mentioned movable rail and which is spaced to act against the outside edges of certain of the said laminations; while the oblique end face of the movable rail acts in the opposite direction, against the inside edges of the said certain laminations, and aligning means for the remaining laminations.

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