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SPACING MEANS FOR TRAFFIC AND GUARD RAILS

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2 Sheets-Sheet 2

Fig. 3.

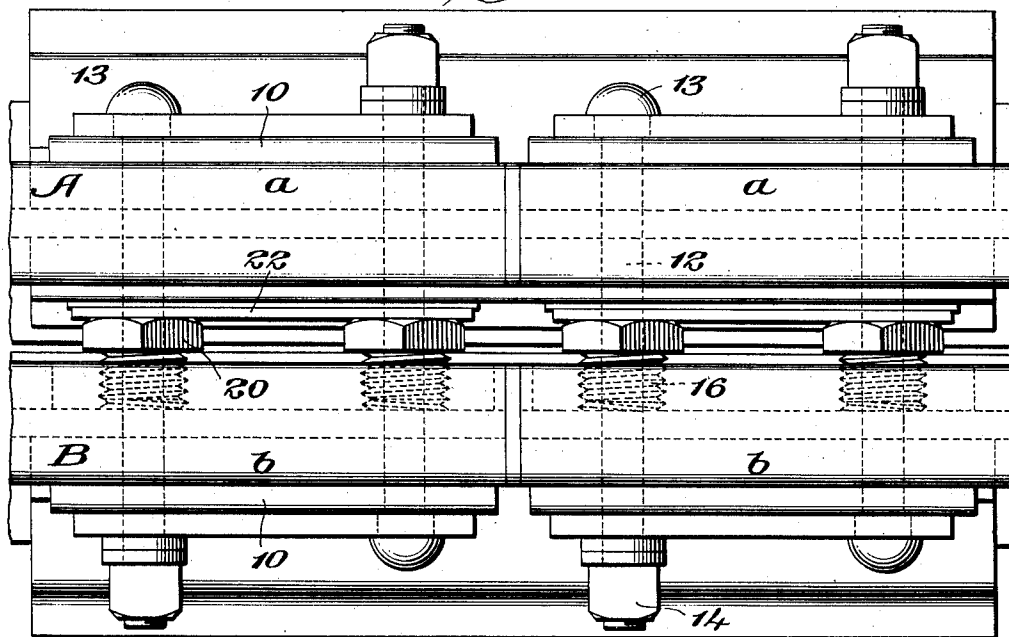
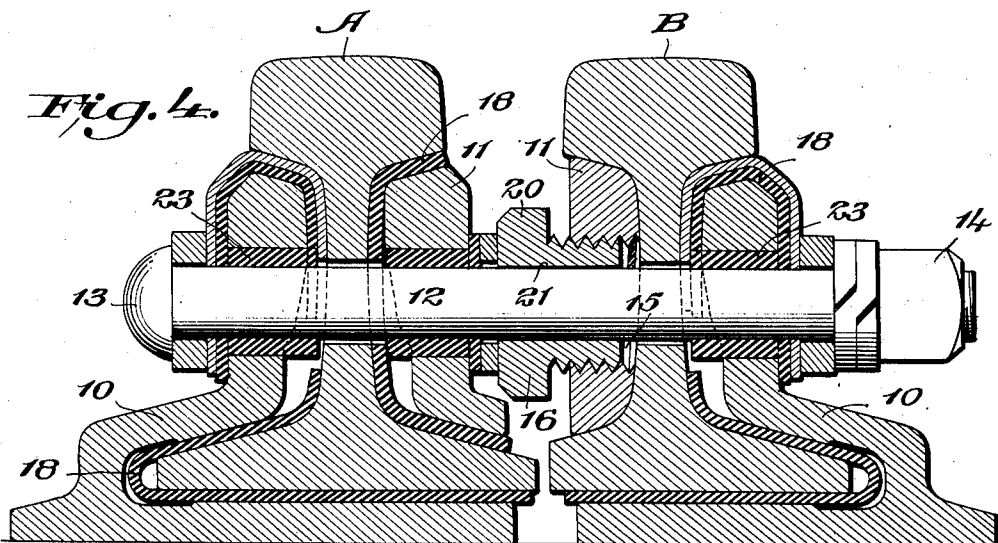


Fig. 4.



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SPACING MEANS FOR TRAFFIC AND GUARD RAILS

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6 Claims. (Cl. 238-22)

This invention relates to railway track structures, such as crossings, turnouts, crossing and turnout approaches, curved track sections and the like, wherein guard rails are used at the sides of traffic rails, and has for its general object to provide improved means for adjustably spacing such rails apart and for securely fastening them together in any selected spaced apart relationship.

With the foregoing and other objects in view, which will become more fully apparent as the nature of the invention is better understood, the same consists in the novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings and defined in the appended claims.

In the accompanying drawings, wherein like characters of reference denote corresponding parts in the different views:

Figure 1 is a top plan view of a portion of a railway track structure including a traffic rail and a guard rail and illustrating means embodying the features of the invention for adjustably spacing the rails apart and for securely fastening them together.

Figure 2 is a transverse section on an enlarged scale through the structure shown in Fig. 1; and

Figures 3 and 4 are views similar to Figs. 1 and 2, respectively, illustrating spacing and fastening means as in Figs. 1 and 2 embodied in an insulated splicing structure for the traffic and guard rails.

Referring to the drawings in detail, A designates, generally, in each figure a traffic rail and B designates, generally, in each figure a guard rail located as usual at one side of the traffic rail and spaced therefrom.

Both the traffic rail A and the guard rail B are indicated as being comprised by separate rail sections *a, a* and *b, b*, respectively, disposed in end to end relationship with their joints or meeting ends aligned transversely of the track structure. In accordance with the invention the meeting end portions of the traffic rail sections *a, a* and the meeting end portions of the guard rail sections *b, b* are respectively spliced together by a common splicing structure including outer splice bars 10, 10 at the outer sides of the traffic and guard rails, respectively, and inner splice bars 11, 11 at the inner or flangeway sides of the traffic and guard rails, respectively.

Aligned bolt holes are provided in the rail sections *a, a* and *b, b* and in the splice bars 10, 10

and 11, 11 and have extending therethrough joint bolts 12 each of which is provided at one end with a head 13 cooperating with the outer face of one of the outer splice bars 10, and at its other end with a nut 14 cooperating with the outer face of the other outer splice bar 10, whereby said bolts are effective to draw said outer splice bars 10, 10 against their related rails and also to draw the traffic and guard rails toward each other.

A distinctive feature of the present invention is the formation in an inner splice bar 11 of enlarged bolt holes 15 which are of a substantially larger diameter than the bolts 12, and each of said enlarged bolt holes is provided with threads *x* therein to adjustably receive the threaded shank 16 of a tubular spacer-bushing 19 having a combined bearing and wrench head 20 at one end, the said bushing being further provided with a smooth unthreaded bore 21 to receive a joint bolt 12.

Preferably there is one of the spacer-bushings 19 associated with each joint bolt 12 and having the same spacing apart as the bolt holes, and these bushings project beyond the outer face of the inner splice bar 11 in which they are adjustably threaded so that their outer ends or heads 20 have either a direct engagement with the outer face of the opposite inner splice bar 11 or an indirect engagement therewith through the medium of an interposed washer or washer plate 22 disposed against the outer face of the said other inner splice bar 11. Thus, the said spacer-bushings 19 constitute, in conjunction with the inner splice bars for the two rails, combined spacing and tightening means for the said rails to provide conveniently accessible means for the proper tight maintenance of the duplex joint structure, as is evident from an inspection particularly of Figs. 3 and 4 of the drawings. Accordingly, by tightening the joint bolts 12 the two rails naturally are urged in a direction toward each other with the result of tightening the outer splice bars and at the same time because of the presence of the interposed spacer-bushings 19, between the inner splice bars of the opposite rails, the inner splice bars will also become tightly seated in their fishing spaces and the two rails anchored and tightly held in their properly spaced relation.

By adjusting the spacer-bushings 19 inwardly or outwardly relative to the splice bar 11 in which they are threaded, the spacing of the rails A and B may be considerably varied. Thus, a desired spaced apart relationship of the rails

may readily be obtained, particularly since the spacer-bushings 19 are, as shown, provided with heads 20 exposed between the rails A and B for manipulation by a wrench inserted between the heads of said rails.

According to the embodiment of the invention illustrated in Figs. 1 and 2, the joints between the rail sections *a*, *a* and *b*, *b* are of the Standard type, not insulated, and the splice bars are of the "toeless" type; whereas, according to the embodiment of the invention illustrated in Figs. 3 and 4 the splice bars are of the well known "continuous" type and the joints are insulated by sheets of insulation 18 interposed between the splice bars and the rails and by sleeves 23 of insulation interposed between the bolts 12 and the splice bars. However, the invention is not limited to any particular type of joint, nor to use in association with splice bars of the "toeless" and "continuous" types. On the contrary, the splice bars may be of any other type and the joints may be insulated or non-insulated as circumstances may demand. In fact, the present spacing means need not be associated with a rail joint structure. On the contrary, the heads and nuts of the bolts 12 may cooperate either directly with the outer faces of the webs of the traffic and guard rails, or through suitable interposed plates, blocks or the like, and any equivalents of the splice bars 11 may be employed in lieu of said splice bars at the inner sides of the rails.

The unitary splicing structure common to the rail sections *a*, *a* and *b*, *b* of the traffic and the guard rails A and B is strong, sturdy, practical and compact, while by employing adjustable spacing elements of the form and type shown, through which the joint bolts 12 extend, the tension exerted by said joint bolts is applied most advantageously to the joint and to said spacing elements.

If desired, adjustable spacing elements as shown may be employed in association with each of the inner splice bars 11 to increase the range of adjustment of the rails A and B.

Without further description it is thought that the features and advantages of the invention will be readily apparent to those skilled in the art, and it will of course be understood that changes in the form, proportion and minor details of construction may be resorted to, without departing from the spirit of the invention and scope of the appended claims.

We claim:

1. A duplex rail joint structure including a pair of oppositely arranged rails in spaced relation, outer and inner joint bars for each rail, a single joint bolt common to both rails and extending through the joint bars thereof and a spacer element sleeved upon the joint bolt, said spacer element having an adjustable engagement with one inner splice bar and an abutting relationship to the opposite inner splice bar.

2. A duplex rail joint structure including a

pair of oppositely arranged rails in spaced relation, outer and inner joint bars for each rail, a single joint bolt common to both rails and extending through the joint bars thereof and a spacer element sleeved upon the joint bolt, said spacer element having an adjustable threaded engagement with an inner splice bar and a head member exposed for wrenching purposes between the two rails and having an abutting relationship to the opposite inner splice bar.

3. A duplex rail joint structure including a pair of oppositely arranged rails in spaced relation, outer and inner joint bars for each rail, a single joint bolt common to both rails and extending through the joint bars thereof and a spacer element sleeved upon the joint bolt, said spacer element comprising a bushing with a smooth bore receiving the joint bolt, a threaded stem adjustably engaging one of the inner splice bars, and an outer head exposed for wrenching purposes in the space between the two rails and having an abutting relationship to the opposite inner splice bar.

4. In a railway track structure, a traffic rail, a guard rail, inner splice bars at the flangeway sides of said rails and outer splice bars at the outer sides of said rails, spacing means between said rails including at least one tubular spacer-bushing threaded into at least one of said inner splice bars for inward and outward adjustment relative thereto and for cooperation with the other inner splice bar to predetermine the limit of movement of the rails toward one another, and a bolt extending through said bushing and through the splice bars and the rails for drawing the splice bars against the rails and the rails toward one another to their limit of movement as determined by said spacing means.

5. A duplex rail structure including a pair of rails disposed in side to side spaced apart relationship, a single joint bolt common to both rails extending through the latter, a member disposed against the inner side of one of the rails, a spacer element sleeved upon the joint bolt and threaded in said member for inward and outward adjustment relative thereto, and a second member disposed against the inner side of the other rail and with which the outer end of said spacer element abuts.

6. A duplex rail structure including a pair of rails disposed in side to side spaced apart relationship, a single joint bolt common to both rails extending through the latter, a member disposed against the inner side of one of the rails, and a spacer element in the form of a hollow nut sleeved upon said joint bolt and threaded in said member for inward and outward adjustment relative thereto and having abutting cooperation at its outer end with the other rail.

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