G. E. WOODS.

GUARD RAIL AND RAIL JOINT.

APPLICATION FILED MAY 25, 1912.

1,039,003.

Patented Sept. 17, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

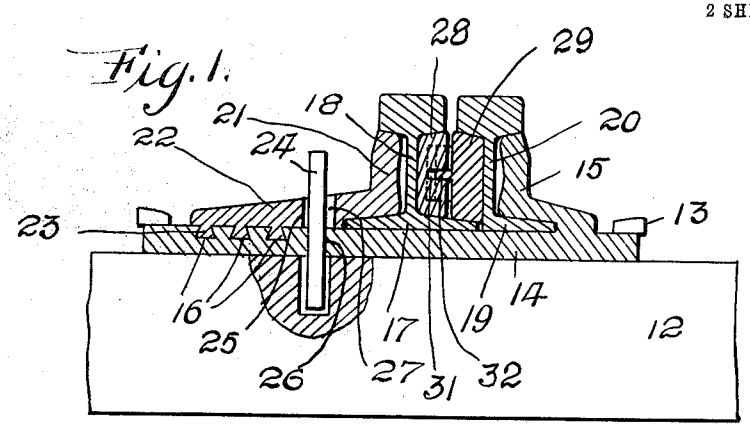



Fig. 2.

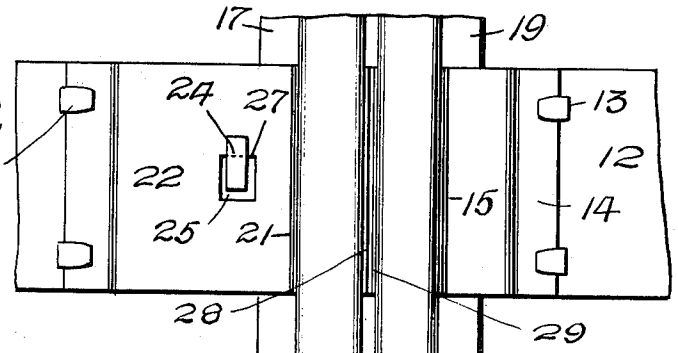



Fig. 3.

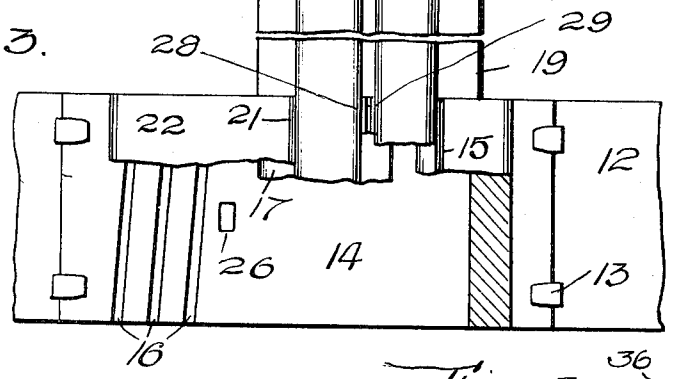



Fig. 4.

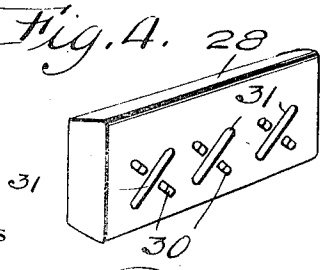



Fig. 5.

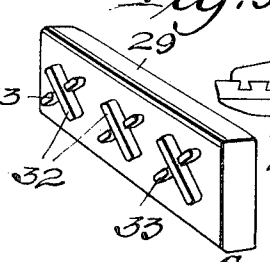
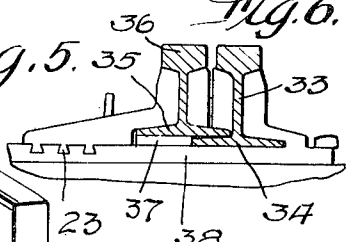



Fig. 6.

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2 SHEETS—SHEET 2.

Fig. 7.

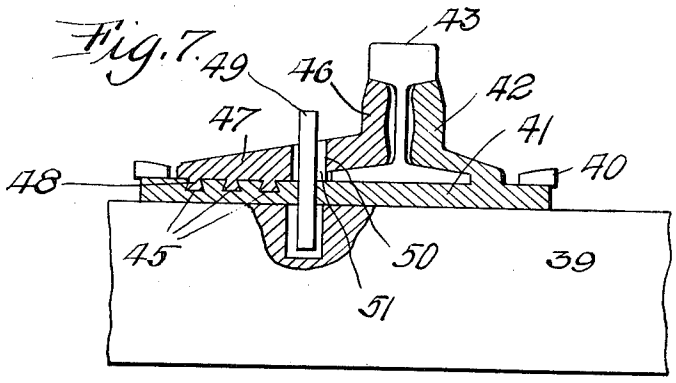



Fig. 8.

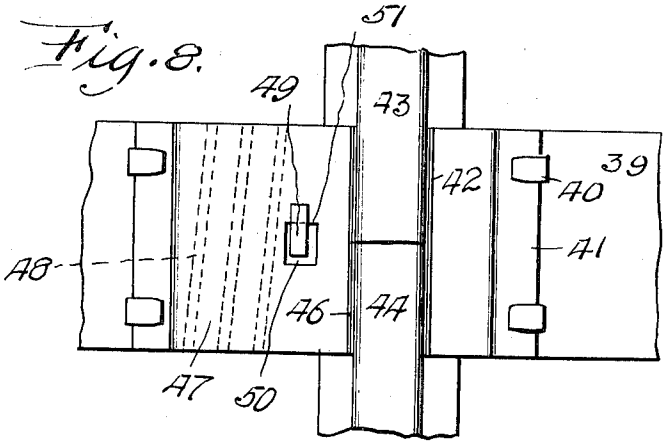



Fig. 9.

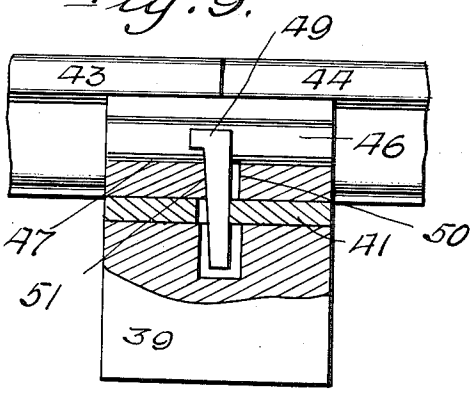
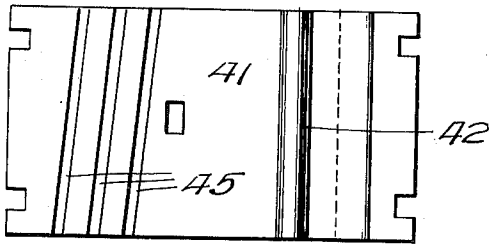



Fig. 10.

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# UNITED STATES PATENT OFFICE.

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## GUARD-RAIL AND RAIL-JOINT.

1,039,003. Specification of Letters Patent. Patented Sept. 17, 1912.

Application filed May 25, 1912. Serial No. 699,671.

*To all whom it may concern:*

Be it known that I, GEORGE E. WOODS, a citizen of the United States of America, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Guard-Rails and Rail-Joints, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to guard rails and rail joints and has for its object to provide means in a manner as hereinafter set forth for conveniently securing a guard rail in position and with means whereby if the guard rail should become loose it can be quickly tightened without driving the filler blocks between the main rail and the guard rail or without the interposition of wedges between the filler blocks.

A further object of the invention resides in the utilization of the securing means for the guard rail, slightly modified, to provide an efficient joint for the apposing ends of a pair of main rails.

Further objects of the invention are to provide a guard rail and rail joint which is comparatively simple in its construction and arrangement, readily positioned and conveniently adjusted to take up any looseness of the rails when desired, strong, durable, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view the invention consists of a novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawing wherein is shown an embodiment of the invention, and it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings Figure 1 is a transverse sectional view of a guard rail securing means in accordance with this invention, showing the adaptation thereof in connection with a main rail and a guard rail. Fig. 2 is a top plan view broken away, Fig. 3 is a sectional plan broken away, Figs. 4 and 5 are perspective views of the filler blocks, Fig. 6 is a cross section of a modified form, Fig. 7 is a cross sectional view of the adaptation of the invention as a rail joint, Fig. 8 is a top plan view of Fig. 7, Fig. 9 is a side elevation, and Fig. 10 is a top plan view of the chair plate.

Referring to Figs. 1 to 5 a tie is indicated at 12 and upon which is secured by the spikes 13, a rail chair which consists of a rectangular plate 14 provided with an integral splice bar or holding member 15 and said plate 14 has its upper face formed, at that side opposite the side with which the holding member 15 is integral, with a plurality of transversely extending and diagonally disposed dove tailed grooves 16, as shown three in number, but the number can be increased or diminished. Mounted upon the upper face of the plate 14 is the base 17 of a main rail 18 and also mounted upon said plate 14 is the base 19 of a guard rail 20. The base 19 abuts against the base 17 and engaging with one side of the head, web and base of the guard rail 20 is the holding member or splice bar 15. Engaging one side of the head, web and base of the main rail 18 is a fastener member 21 having its lower portion extended as at 22 and seated upon the upper face of the plate 14. The extended portion 22 of the member 21 has its lower face formed with a series of depending dove tailed tongues 23 which engage in the groove 16. The tongues 23 are entered into the grooves 16 through one side of the plate 19 and as the member 21 is shifted toward the other side of the plate 14, the latter is shifted, which carries the guard rail 20, toward the main rail 18, whereby the guard rail 20 is maintained in operative position with respect to the main rail 18, and if said rail 20 should shift away from operative position it can be readily returned to such position by shifting the member 21 across the plate 14. The providing of the member 21 with the dove tailed tongues 23 prevent vertical movement of the member 21 with respect to the plate 14. The member 21 is shifted through the medium of a wedge 24 which extends through an opening 25 in the extended portion 22 of the member 21 and passes through an opening 26 in the plate 14 and enters the tie 12. By driving the wedge 24 downwardly and as it engages with the wall 27 of the opening 25 it is obvious that the member 21 will be shifted in a direction to move the plate 14 to tighten the guard rail 20. The ends of the plate 14 are provided with notches of sufficient length for the pas-

sage of the shanks of the spikes 13, the length of the openings being such as to permit of the shifting of the plate 14. Interposed between the main rail 18 and guard rail 20 are a pair of filler or spacing blocks 28 and 29. The former has one face provided with three sets of pockets, the pockets of each set being indicated at 30 and 31, the latter extending between the former and the pockets of each set are disposed at an inclination. The plate 29 has one face formed with sets of protuberances, the protuberances of each set being indicated at 32 and 33. The sets of protuberances are arranged in a manner as the sets of pockets and extend into the pockets as clearly shown in Fig. 1. The depth of the pockets with respect to the depth of the protuberances is such as to allow of the shifting of the block 29 toward the block 28 when tightening the guard rail 20. The protuberances prevent vertical movement of the block 29 with respect to the block 28. The pockets and protuberances provide means for interlocking the blocks together.

Referring to Fig. 6 of the drawings the guard rail which is indicated by the reference character 33 has its base 34 extending under the base 35 of the main rail 36. A filler block 37 is interposed between the base 35 and the chair plate 38. Otherwise than that as stated the construction shown in Fig. 6 is the same as that illustrated by Fig. 1.

Referring to Figs. 7 to 10 of the drawings 39 denotes a tie upon which is secured by the spikes 40 a rail chair consisting of a rectangular plate 41 having formed integral therewith near one end thereof a vertically disposed splice bar 42 which engages one side of the heads, webs and bases of the apposing rails 43 and 44. The rails 43 and 44 are seated upon the plate 41. The plate 41 has its upper face, at that end opposite the end with which the splice bar 42 is formed integral, provided with a plurality of transversely extending and diagonally disposed dove tailed grooves 45, as shown three in number, but this number can be increased or diminished if desired. Engaging the other side of the heads, webs and bases of the rails 43 and 44 is a rail fastener 46 having the lower portion thereof extending outwardly as at 47 and seated upon the upper face of plate 41. Depending from the lower face of the extension 47 are dove tailed tongues 48 which are mounted in the grooves 45, and the function of which is when the fastener 46 is shifted transversely with respect to the plate 41, it will be brought into tight engagement with the rails and at the same time shift the chair plate 41 so that the splice bar 42 will also tightly engage the rails. The fastener 46 is shifted through the medium of a wedge 49 which extends through an opening 50 in the extension 47 and engages the wall 51 of said opening. The wedge 49 also extends through an opening 52 in the plate 41 and engages in the tie 39. The tongues 48 prevent vertical movement of the fastener 46 with respect to the plate 41, while the wedge 49 prevents transverse shifting of the fastener 46 from locked position.

What I claim is:—

1. In combination a chair plate, a holding member integral with said plate, a fastener, said fastener and member adapted to secure elements therebetween, said plate having its upper face provided with a diagonally disposed dove tailed groove, a dove tailed tongue depending from the fastener and seated in said groove, said tongue and groove constituting means for tightening the fastener when shifted in one direction, and a wedge extending through the fastener and plate and engaging with the fastener for shifting it when the wedge is driven, said wedge further constituting means to prevent the shifting of the fastener from locked position.

2. In combination a chair plate for supporting a main and a guard rail, a holding member carried by the plate and adapted to engage the guard rail, a transversely extending fastener shiftably interlocking with said plate and adapted to engage the main rail, and interlocked filler blocks adapted to be interposed between the guard and main rails, and means extending through the fastener and said plate for transversely shifting the fastener to locked position and further constituting means to prevent the fastener from shifting from locked position.

In testimony whereof I affix my signature in the presence of two witnesses.

GEORGE E. WOODS.

Witnesses:
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Max H. Srolovitz.