

P. W. MOORE.
 GUARD RAIL CHAIR.
 APPLICATION FILED NOV. 10, 1911.

1,056,707.

Patented Mar. 18, 1913.
 2 SHEETS-SHEET 1.

Fig. 1.

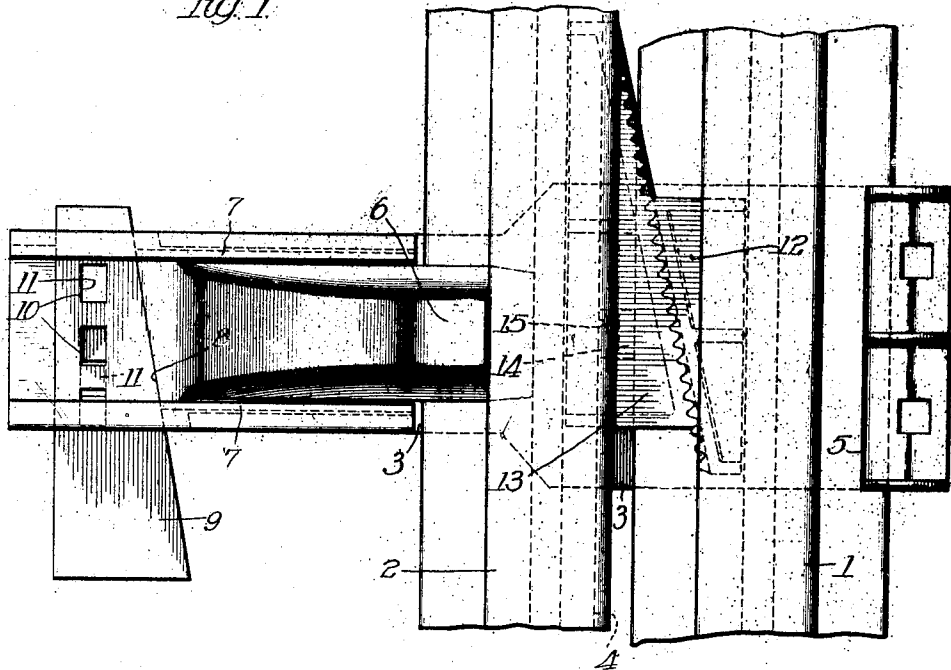
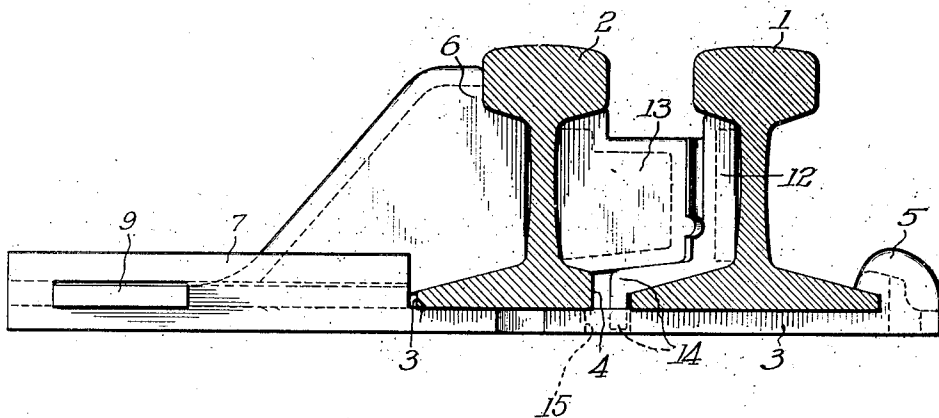


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

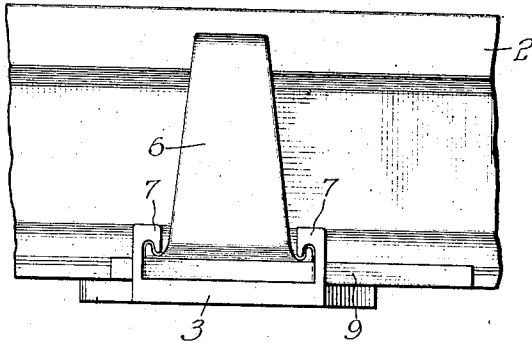


Fig. 4.

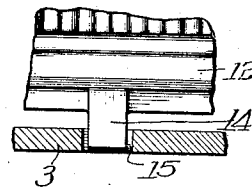
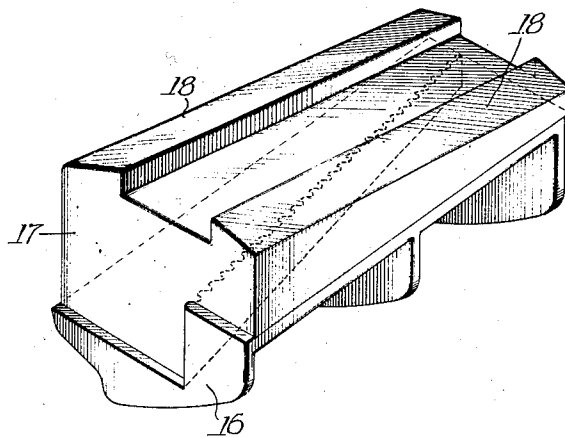


Fig. 5.



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UNITED STATES PATENT OFFICE.

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GUARD-RAIL CHAIR.

1,056,707.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed November 10, 1911. Serial No. 659,617.

To all whom it may concern:

Be it known that I, PHILIP W. MOORE, a citizen of the United States, residing at Evanston, in the county of Cook and State of Illinois, have invented new and useful Improvements in Guard-Rail Chairs, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to a combined guard-rail chair and tie-plate.

One of the objects of the invention is to provide suitable abutments or braces for the main rail and guard-rail for properly spacing these rails and prevent them from moving apart.

Another object is to provide a guard-rail chair having the function of a tie-plate and having abutments or braces, one of which is adjustable.

A further object is to provide spacing blocks, wedges or cheek pieces adapted to be located between the aforesaid rails to force them firmly against the abutments or braces referred to, said blocks being held in place without the use of bolts or other devices requiring holes or openings through the rails.

Another object is to provide a spacing block in the form of an adjustable chock, adapted for all sizes of rails.

In the accompanying drawings I have illustrated a simple and practical embodiment of my invention. Other embodiments are contemplated.

Referring to the drawings: Figure 1 is a top plan view of the form of guard-rail chair and tie-plate selected for the purpose of illustration, shown in assembled position with respect to the two rails. Fig. 2 is an elevation thereof with the rails in section. Fig. 3 is an end elevation thereof. Fig. 4 is a fragmentary view of certain details. Fig. 5 is a perspective view of a modified form of wedging blocks or chock.

Referring to the drawings, the main rail 1 and the guard-rail 2 are arranged side by side in the customary manner and both rest directly on the base 3 of the guard-rail chair, said base acting therefore, as a tie-plate. One flange of the guard-rail is cut away at the point 4, so that said rail may be arranged in close proximity to the main rail

1 with the rail head located closer than 55 would otherwise be the case and so that a suitable clearance may be provided between the adjacent flanges of the rails for a purpose hereinafter set out.

It is essential that the two rails be properly braced to prevent them from moving apart. Accordingly I provide an abutment or jaw 5 at one end of the base plate 3 and preferably formed integrally therewith. This jaw engages the base of the main rail 1 directly and grips the same firmly to prevent an outward movement thereof. The guard-rail is firmly braced by the larger abutment or brace 6, which preferably is shaped to conform in general to the outline of the rail so that it will bear against the same both at the top and bottom. This brace or abutment 6 is adjustable with respect to the base plate 3 and is adapted to be moved back and forth in ways or guides 7 which are preferably formed integral with the end of said base plate. The brace or abutment 6 terminates preferably in a wall portion 8 arranged somewhat diagonally with respect to the device as a whole. The diagonal wall bears directly against the inclined face of the wedge 9, which is provided preferably with three holes 10, although, of course, I do not limit myself to any particular number. The base 3 is provided preferably with two holes 11. One of the holes coincides with the upper hole in the wedge 9, with the parts in the position seen in Fig. 1. The other hole is shown in dotted lines. By moving the wedge in or out until certain upper and lower holes coincide, said wedge may be spiked in any one of a plurality of positions, whereby the brace 6 may be properly located to meet the varying requirements due to the use of different sizes of rails.

The rails are spaced apart and wedged against the opposing abutments 5 and 6 by means of two blocks or wedges 12 and 13, forming an adjustable chock. The block 12 is preferably provided with a downwardly extending projection or lug 14 adapted to fit into a corresponding slot or recess 15 in the base 3. The lug 14 cooperating with said slot prevents movement of said block 12 longitudinally with respect to the rails. The adjacent faces of the wedge blocks 12 and 13 are serrated or toothed, whereby

these members are interlocked in any position and prevented from a relative return movement which would relieve the opposing thrust which they are intended to exert.

5 The parts are assembled as follows: The wedge 9 is adjusted to approximately the desired position to permit the rails to be spread apart with their center lines about the desired distance apart. The block 12
10 is then put in place with its lug 14 fitting in the slot 15. The block 13 is then slid into place as far as possible, although, of course, there is a certain looseness or play due to the fact that the serrations or ribs on the
15 adjacent faces of these two blocks prevent a firm wedging engagement. By driving in the wedge 9, however, the movable abutment 6 forces the guard-rail 2 toward the main rail 1 and thereby forces the blocks 12
20 and 13 into firm locking engagement with each other. If the rails are now found to be spaced the proper distance apart, the wedge 9 may be secured in position by driving a spike through one of the holes 10
25 therein and through some one of the holes 11 in the base 3. The arrangement of holes is such that there are two holes in more or less vertical alinement in nearly any position of the wedge. If it is found, how-
30 ever, that the rails are not spaced exactly the desired amount, the wedge 9, instead of being spiked into position, is driven back and the block 13 is adjusted a distance of one or more teeth in one direction or the
35 other, whereupon the wedge 9 is again driven home and may be spiked in place if the spacing of the rails is found to be correct. From the above description it will be apparent that the wedge 9 provides for general
40 adjustments and the blocks 12 and 13 provide for minute adjustments. Furthermore, it is a simple matter to provide for rails of different sizes by providing different pairs of blocks, all of which may have
45 the same lateral dimensions, but varying in vertical dimensions. Referring to Fig. 2, for example, it will be seen that larger rails will require fillers of greater vertical height to fill in the space between the under side
50 of the head and the upper side of the base. The fillers or wedges may be of uniform width, however, as any desired total width may be obtained by the minute adjustment referred to.

55 In Fig. 5 I have illustrated a modified form of adjustable chock which may be adjusted not only to increase its total width but also its total height. The chock comprises two blocks or wedge members 16 and
60 17 which have longitudinally inclined vertical walls provided with teeth or serrations similar to those described in connection with the preceding form of chock and having in addition cooperating faces which engage
65 along a plane inclined somewhat from the

horizontal. It is apparent that by moving the member 17 longitudinally with respect to the member 16, for example, the outer wall of the member 17 will be moved away from the opposite outer portion of the member 16. Simultaneously, the upper face 18
70 of the member 17 will be moved upwardly or away from the base of the member 16. The chock as a whole will therefore be enlarged both in width and in height, whereby it is adapted for use with rails of all sizes.
75 The wedge member 16 may, of course, be provided with a downwardly extending lug (not shown) similar to that previously described. A chock such as described is adapted for use in various relations, and is particularly adapted for use in connection with the guard rail chair of the general form shown in the preceding figures.

It is apparent that bolts are not required in connection with either form of chock described, the parts being held in the desired position by the interlocking teeth on the adjacent surfaces. This obviates the necessity of drilling a hole or providing a slot
85 in the vertical web of the rail.

The invention is not limited to the details shown and described, as I am aware that various changes may be made within the scope of the invention, as expressed in
90 the appended claims.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A guard rail chair having a base plate adapted to support a main rail and a guard
100 rail, the latter having a portion of one flange removed to provide a clearance between the bases of said rails, thereby giving access to an opening in said base plate and permitting adjustment of said rails toward
105 and away from each other without covering said opening, a jaw formed integrally with one end of said base plate for gripping one flange of the main rail, a sliding block mounted on the other end of said base and
110 fitting against both the base and the head of said guard rail to brace the same, ways in which said block is guided, a wedge for determining the position of said block, said wedge having openings therein which are
115 unequally spaced with reference to corresponding openings in said base plate whereby a spike may be inserted through a pair of registering openings, a pair of wedge blocks between said rails to hold them
120 against the aforesaid outer abutments, said wedges having interfitting engagement in a horizontal as well as in a vertical plane, one of said wedges being of a length greater than the width of said base plate whereby a plu-
125 rality of fine adjustments of said blocks may be obtained to vary the distance between said rails, said other block having a downwardly extending lug projecting into the opening of the base plate between said rail bases where-
130

by said blocks are locked to said base plate and to each other without the use of bolts.

2. A guard-rail chair comprising, in combination, abutments adapted to bear against the main rail and the guard rail to prevent separation thereof, said abutments being adjustable toward and away from each other to provide for a proper spacing of said rails, and a chock adapted to be arranged between said rails to force them against said abutments, said chock comprising members which are relatively movable in a plurality of planes, whereby the effective width and height of said chock may be varied to suit different sizes of rails.

3. A chock comprising wedging blocks having two sets of cooperating faces engaging along planes, one of which is inclined vertically and the other inclined horizontally, whereby relative movement of said blocks longitudinally will cause an increase

both in the height and width of said chock to adapt the same for all sizes of rails.

4. A chock comprising two cooperating blocks engaging along diagonally arranged surfaces, one block having an upper and outer surface substantially equal to the width and height respectively of said chock, the other block having an outer and lower surface also equal respectively to the height and width of said chock, whereby said chock may engage adjacent rails and properly space them apart in various positions of adjustment adapted to varying sizes of rails.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

PHILIP W. MOORE.

Witnesses:

GEO. B. JONES.

EUGÉNIE LE ROUX.