D. FAIRBACK.

ADJUSTABLE RAIL BRACE.

APPLICATION FILED DEC. 5, 1921.

1,413,016. **Patented Apr. 18, 1922.**

Fig. I.

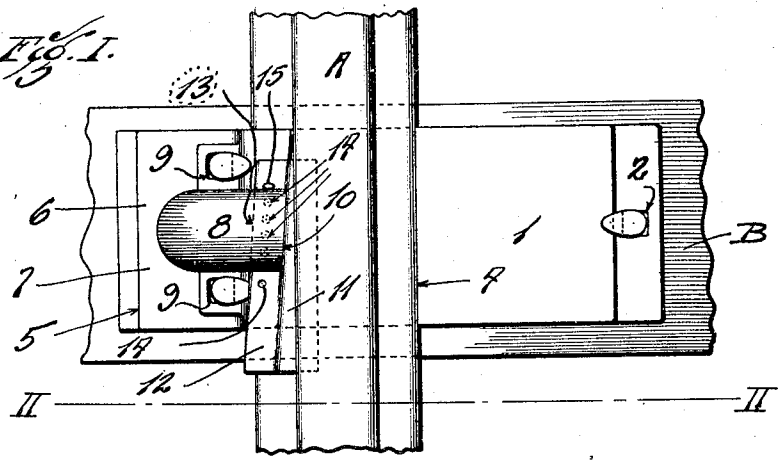


Fig. II.

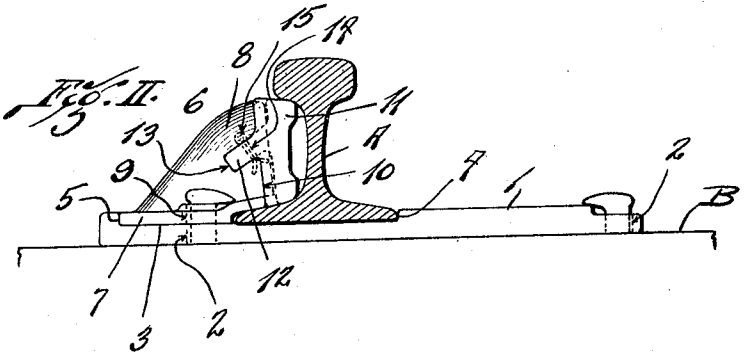


Fig. III.

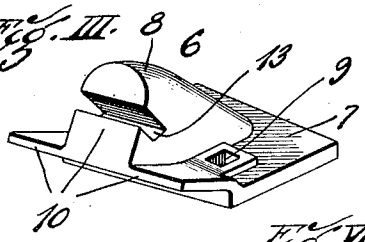


Fig. IV.

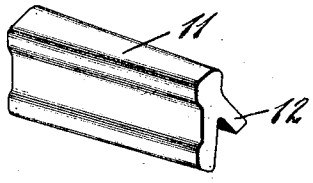


Fig. VI.

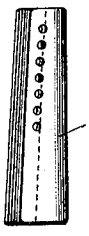
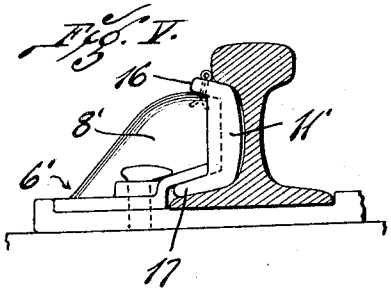


Fig. V.



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by Cook & McCauley. Attys.

UNITED STATES PATENT OFFICE.

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ADJUSTABLE RAIL BRACE.

1,413,016. Specification of Letters Patent. Patented Apr. 18, 1922.

Application filed December 5, 1921. Serial No. 519,816.

To all whom it may concern:

Be it known that I, DICKSON FAIRBACK, a citizen of the United States of America, a resident of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Adjustable Rail Braces, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in adjustable rail braces, and particularly to that class of rail braces adapted to support railroad rails and retain same in fixed positions on the ties upon which they are laid. The object is to produce a simple and inexpensive device of this kind which is so constructed that if the brace is loosened, as a result, for instance, of the vibration caused by passing trains, said brace may be adjusted to eliminate this looseness and to cause said brace to bear tightly against said rail.

Another object of the invention is to produce a device which, while performing the functions of a rail brace, i. e. assisting in the support of said rail, will also act as a means of preventing said rail from moving upwardly relative to the ties, thus doing away with the spikes and plates heretofore used for that purpose.

Briefly stated, the preferred form of the invention comprises a plate upon which the rail rests, said plate being provided with spike holes. A bracing member which rests on the upper face of said plate adjacent to the rail is provided with spike holes which register with certain of the spike holes in the plate, and spikes are driven through the spike holes in the plate and in the bracing member to secure these parts to a tie.

With the foregoing and other objects in view, the invention comprises the novel construction, combination and arrangement of parts hereinafter more specifically described and illustrated in the accompanying drawings wherein is shown the preferred embodiment of the invention. However, it is to be understood that the invention comprehends changes, variations and modifications which come within the scope of the claims hereunto appended.

Fig. I is a plan view showing an adjustable rail brace as it appears when in use, the rail and tie being broken away.

Fig. II is a section on line II—II of Fig. I.

Fig. III is a perspective of the bracing member.

Fig. IV is a perspective of the rail contacting member.

Fig. V illustrates a modified form of my invention.

Fig. VI is a plan view of the rail contacting member shown in Fig. V.

In the drawing, A is a railroad rail of the ordinary type comprising a base, web and ball, and adapted to be supported on the usual ties, one of which is shown in Figs. I and II, wherein it is designated by the reference character B.

Located upon the upper face of said tie B is a plate 1 provided with a plurality of apertures 2 adapted to receive spikes whereby said plate 1 may be secured to said tie. The plate 1, it will be observed, is provided with a depressed portion 3 which extends entirely across the plate, said depressed portion providing a shoulder 4 and a shoulder 5, the purposes of which will be subsequently pointed out.

The plate 1 is interposed between the rail A and the tie B (Fig. II), and one of the marginal edges of the base of said rail bears against the shoulder 4, whereby said rail is prevented from moving inwardly relative to said plate 1.

Located on the upper face of the plate 1 is a bracing member 6, which comprises a horizontal plate portion 7 and an upstanding head 8. It will be observed by referring to Fig. II that the outer marginal edge of the horizontal plate portion of the bracing member contacts with the shoulder 5 on the plate 1 and that a depression is formed on the underside of said horizontal plate portion at the inner edge thereof for the reception of a portion of the base of the rail A. The horizontal plate portion 7 of the bracing member 6 is provided with a pair of spike-receiving holes 9, one on each side of the upstanding head 8, said spike holes registering with similar spike holes formed in the plate 1, and through these registering holes spikes are inserted and driven into the tie to securely fasten said plate 1 and said bracing member 6 to said tie. The upstanding head 8 and the horizontal plate portion 7 of the bracing member 6 are provided with an abutment face 10 which is

separated from the rail A and at an angle thereto, so as to form a wedge-shaped space between said bracing member 6 and the rail A.

Interposed between the bracing member 6 and the rail A is a tapering rail contacting member 11 provided on one of its sides with a downwardly extending projection 12, in the form of a flange adapted to lie in a groove 13 formed in the upstanding head 8. The rail contacting member 11 is so located with respect to the rail A that the upper face of said rail contacting member is located immediately below the ball of said rail. In other words, the lower face of the ball of said rail rests upon the upper face of said rail contacting member, and the lower face of said rail contacting member bears against the upper face of a portion of the base of said rail (Fig. II), and the projection 12 on said rail contacting member extends into a groove 13 in the upstanding head. The rail contacting member is thus supported in a very substantial manner by said upstanding head, and when a load is placed upon the ball of the rail A a portion of said load will be supported by the rail contacting member and the upstanding head 8.

Assuming that the tie B is in place and that the plate 1 is secured to said tie by means of the single spike adjacent to the inside edge of said plate 1, the rail A is then placed on said plate so that one of the marginal edges of the base of said rail bears against the shoulder 4 on said plate 1. The bracing member 6 is then placed on said plate 1 in the manner shown in Fig. II, the spike holes in said bracing member registering with certain of the spike holes in the plate 1 and the inner portion of said bracing member extending over the outer portion of the base of the rail. Spikes are then driven through the registering spike holes in said parts and into the tie B to secure said plate 1 and said bracing member 6 to said tie. The bracing member then overlaps a portion of the base of the rail to securely hold the same on said plate 1. The tapering rail contacting member 11 is then inserted between the bracing member 6 and the rail A and said rail contacting member 11 is driven inwardly between said parts until it is wedged tightly therebetween to the position shown in Fig. II. The rail A is thus driven tightly against the shoulder 4 and the rail is braced to withstand the great load to which it is subjected. When the device is eventually loosened by the severe stresses to which it is subjected, it can be readily tightened by driving the rail contacting member inwardly until it is again tightly wedged between the bracing member and the rail.

To prevent displacement of the rail contacting member, I provide the projection 12 on said contacting member with a plurality of apertures 14 which are adapted to receive a cotter pin 15. When the rail contacting member has been driven inwardly a sufficient distance to securely wedge the same between the bracing member and the rail, a cotter pin is inserted through an aperture 14, and this cotter pin will bear against the side of the upstanding head 8 adjacent to the small end of the rail contacting member, as shown by Figs. I and II. The rail contacting member is thus prevented from moving toward the comparatively wide end of the tapering space between the upstanding head and the rail.

Fig. V shows a modification wherein the rail contacting member 11′ instead of being provided with a projection intermediate of the upper and lower faces of said rail contacting member is provided with a flange 16 at its upper edge and a flange 17 at its lower edge, the upper flange resting on the upper face of the upstanding head 8′, and the lower flange being interposed between the base of the rail and the lower portion of the bracing member 6′.

I claim:

1. An adjustable rail brace comprising a plate upon which the rail rests, a bracing member located upon said plate, said plate being provided with a shoulder against which the rail bears and a shoulder against which said bracing member bears, said bracing member being provided with an upstanding head extending over a portion of the base of the rail and having a face separated from and at an angle to the rail, and a tapering rail contacting member interposed between said face of the bracing member and the rail.

2. An adjustable rail brace comprising a plate upon which the rail rests, a bracing member located upon said plate, said plate being provided with a shoulder against which the rail bears and a shoulder against which the bracing member bears, said bracing member being provided with an upstanding head extending over a portion of the base of the rail and having a face separated from and at an angle to the rail, and a tapering rail contacting member interposed between said separated face of the bracing member and the rail, said tapering rail contacting member being provided with a projection extending into said upstanding head.

3. An adjustable rail brace comprising a plate upon which the rail rests, a bracing member located upon said plate, said plate being provided with a shoulder against which the rail bears and a shoulder against which said bracing member bears, said bracing member being provided with an upstanding head extending over a portion of the base of the rail and having a face separated from and at an angle to the rail, a

tapering rail contacting member interposed between said separated face of the bracing member and the rail, said rail contacting member being provided with a longitudinal flange extending into said upstanding head, and fastening means comprising a pin extending through said longitudinal flange whereby said tapering rail contacting member is prevented from being accidentally displaced from said upstanding head and the rail.

4. An adjustable rail brace comprising a plate upon which the rail rests, said plate being provided with holes to receive spikes for securing said plate to a tie, a bracing member comprising a horizontal plate portion and an upstanding head, said horizontal plate portion being provided with spike-receiving holes registering with spike holes in the first mentioned plate, the first mentioned plate having a shoulder against which the rail bears and a shoulder against which said bracing member bears, said upstanding head of said bracing member having a face separated from and at an angle to the rail, a tapering rail contacting member interposed between said face of the bracing member and the rail, said rail contacting member being provided with a longitudinal flange extending into said upstanding head, and fastening means comprising a pin extending through said longitudinal flange whereby said tapering rail contacting member is prevented from being accidentally displaced from said upstanding head and the rail.

5. An adjustable rail brace comprising a bracing member provided with a rail-securing element extending over a portion of the base of the rail and having an inclined face separated from and at an angle to the rail, means whereby said bracing member is rigidly secured in a fixed position, and a tapering rail-contacting member interposed between said inclined face of the bracing member and the rail.

6. An adjustable rail brace comprising a plate upon which the rail rests, a bracing member seated on and rigidly secured to said plate, said bracing member having a rail securing element extending over a portion of the base of the rail, and a wedge adjustably mounted between said bracing member and the rail.

7. An adjustable rail brace comprising a plate upon which the rail rests, a bracing member located upon said plate, said plate being provided with a shoulder against which the rail bears and a shoulder against which the bracing member bears and said shoulders being parallel with the rail, said bracing member being extended over a portion of the base of the rail, and a wedge adjustably mounted between said bracing member and the rail.

In testimony that I claim the foregoing I hereunto affix my signature.

DICKSON FAIRBACK.