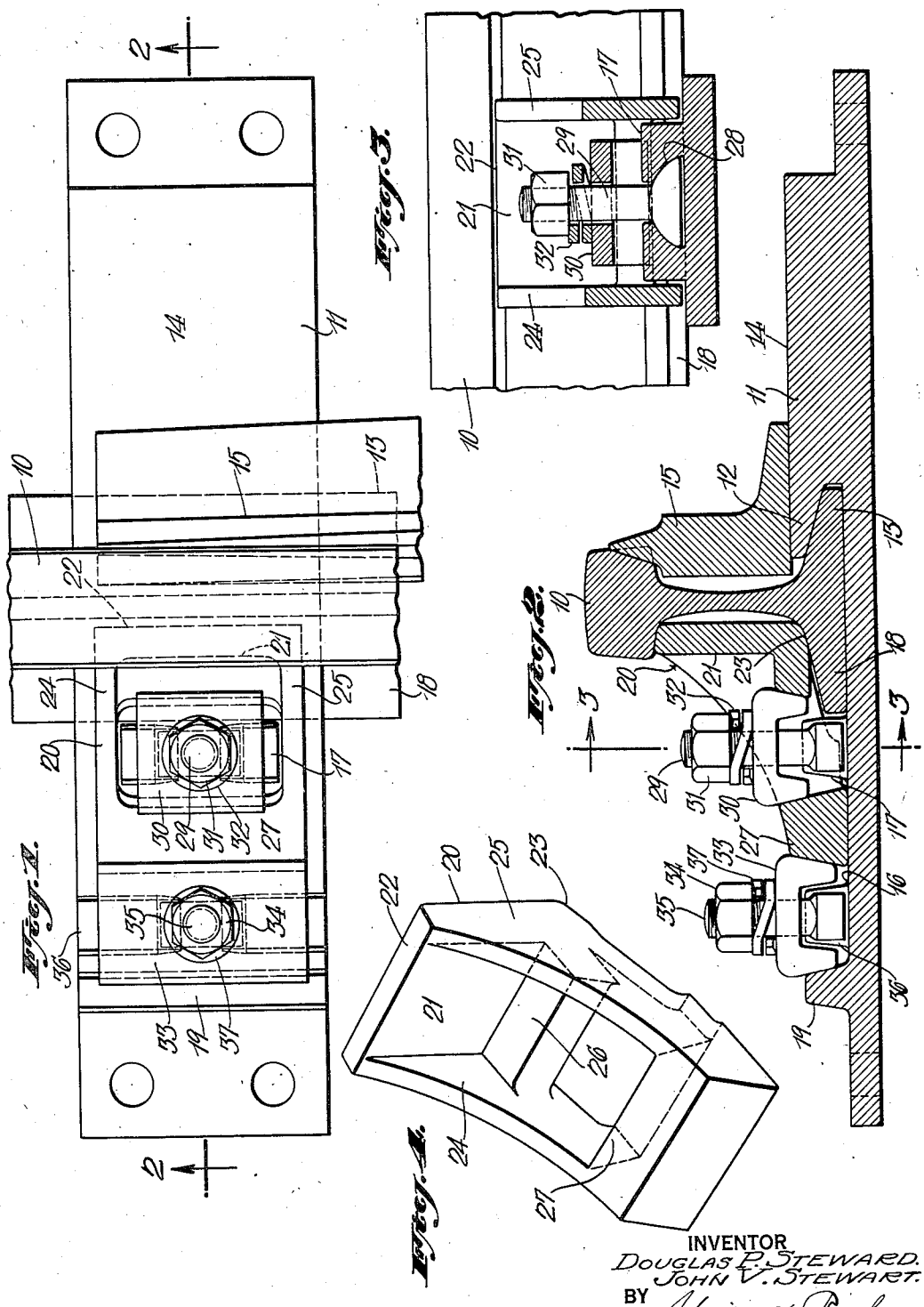
March 31, 1936. D. P. STEWARD ET AL 2,035,929

RAIL BRACE

Original Filed April 4, 1933 3 Sheets-Sheet 1



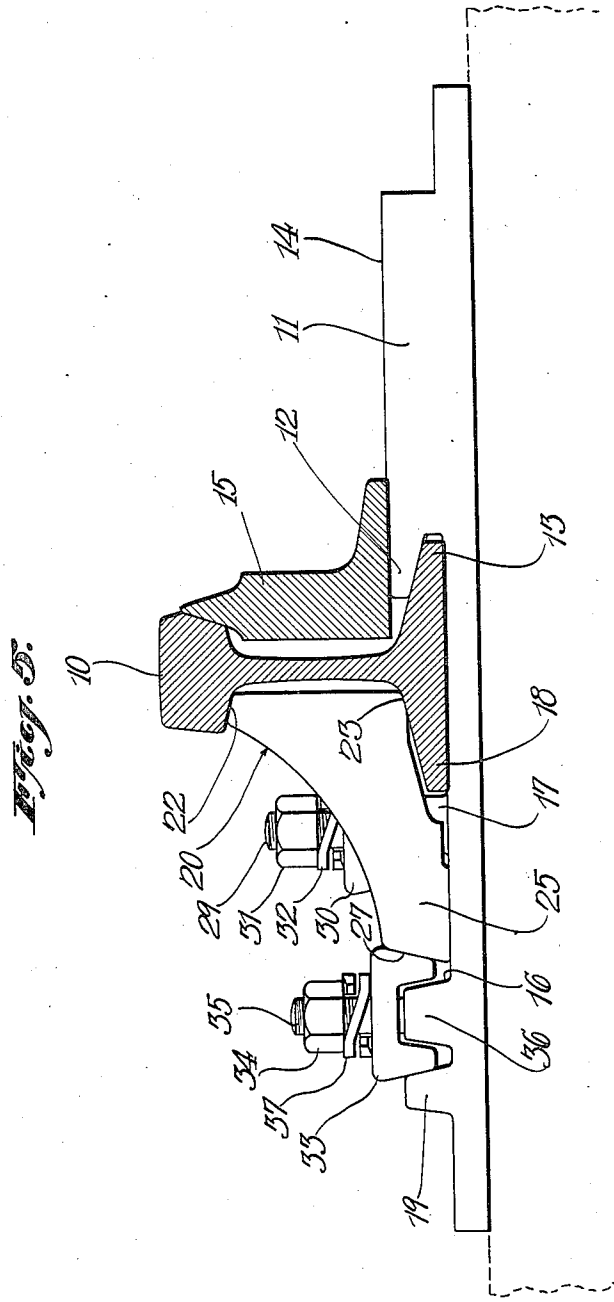
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Fig. 5.



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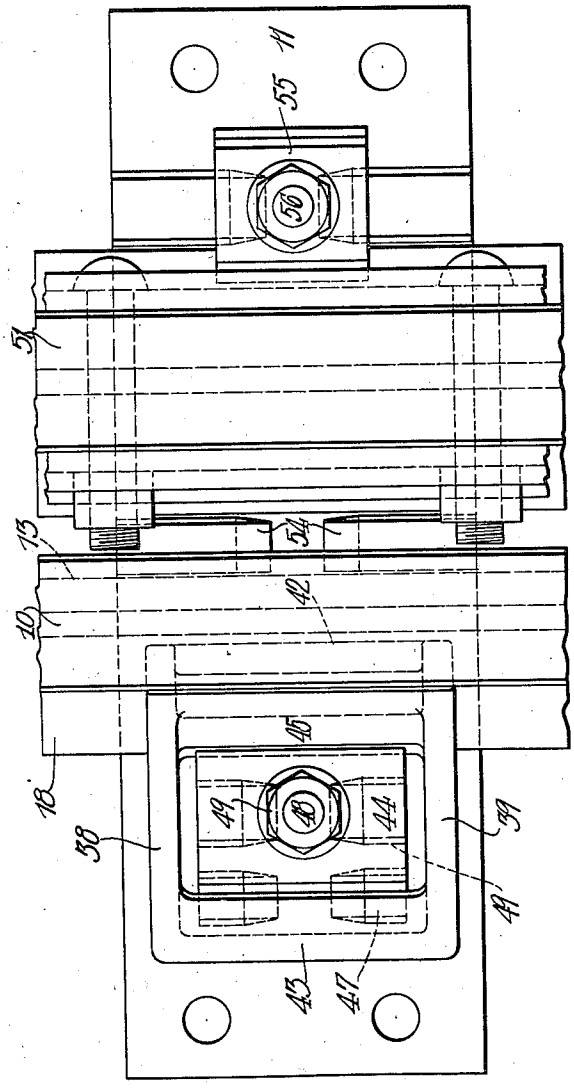


Fig. 6.

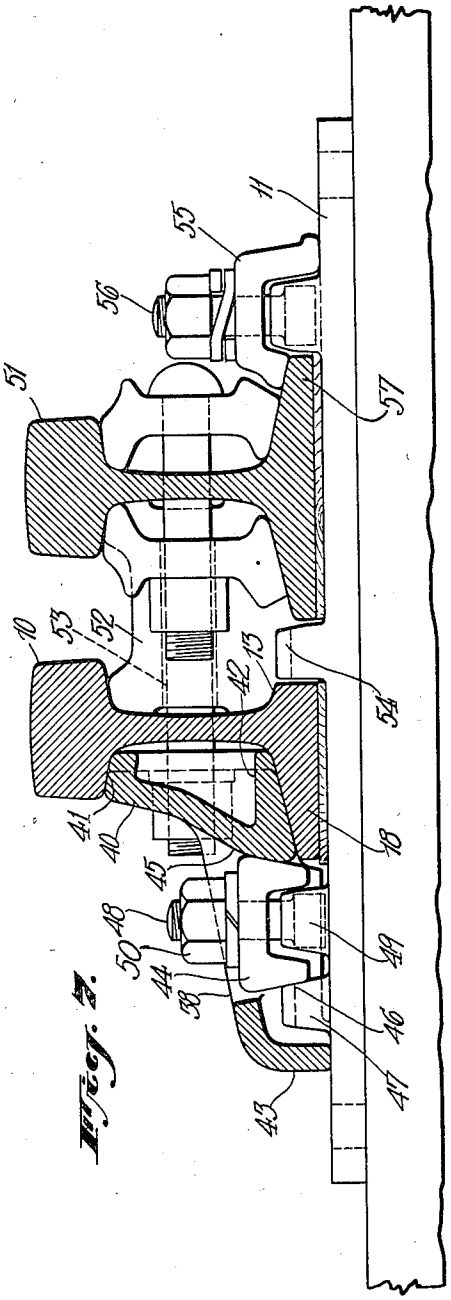


Fig. 4.

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RAIL BRACE

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6 Claims. (Cl. 238—292)

Our invention relates to a brace for securing track rails in position.

An object of the invention is to provide a rail brace of simple, strong construction by which the rail may be wedged tightly in position.

The invention is illustrated in the accompanying drawings, in which—

Fig. 1 is a plan view of a part of a rail, tie plate and brace, embodying a preferred form of the invention; Fig. 2 is a cross-sectional view of the rail and brace taken on the line 2—2 of Fig. 1; Fig. 3 is a section taken on line 3—3 of Fig. 2; Fig. 4 is a perspective view of the brace; Fig. 5 is a vertical section of the rail showing the brace in side elevation; Figs. 6 and 7 are respectively plan and vertical sections of a modification of the brace shown in Figs. 1 to 5 inclusive.

The present invention is a division of copending application Serial No. 664,412 filed April 4, 1933.

Referring more particularly to Figs. 1 to 5 inclusive, the invention is shown as applied to a rail 10 mounted on a tie plate 11 having an overhanging part 12 forming a recess in which one flange 13 of the rail fits and is held, the plate 11 also having a sliding surface 14 on which a point rail 15 slides toward and from the rail 10. The base of the rail 10 is mounted on a lower surface 16 of the tie plate 11 and the surface 16 is provided with two ribs running parallel to the rail 10, one rib 17 being positioned closely adjacent the outer flange 18 of the rail 10 and the other rib 19 being spaced a greater distance from the rail 10. The rail 10 is wedged to force its flange 13 into the recess below the overhanging part 12 and to hold the flange 18 downwardly by means of a brace 20, which is wedged between the ribs 17 and 19 and the flange and head parts of the rail 10.

The brace 20, in the embodiment shown in Figs. 1 to 5, is formed with a vertical plate 21, the upper edge 22 of which wedges against the under surface of the head of the rail and the lower edge 23 of which wedges against the upper surface of the rail flange 18, the under surface of the rail head and the upper surface of the flange 18 being inclined to provide the proper wedging action to secure the rail. Extending downwardly and outwardly from each of the side edges of the vertical plate 21 are supporting extensions or plates 24 and 25 and between the extensions 24 and 25 there is a horizontal flange 26 extending from the lower edge of the vertical plate 21. At the outer ends of extensions 24 and 25 there is a transverse base span or plate 27, the lower surface of which rests on the surface 16 of the tie plate 11. The opposed faces of the base plate 27 and of the flange 26 are tapered downwardly. In placing the brace in position the space between these downwardly tapered surfaces is placed over the upwardly extending rib 17 of the tie plate 11, there having previously been mounted in an anchoring recess 28 in the rib 17, the head of a bolt 29 the stem of which extends upwardly through the space between the base 27 and the flange 26 and through a hole in a wedge 30 projecting into the space between 26 and 27. The wedge 30 is then forced downwardly by means of a nut 31 on the bolt 29, a spring washer 32 being inserted between the nut 31 and the upper face of the wedge 30. The action of the wedge 30 forces the brace 20 downwardly against the flange 18.

The outer face of the base 27 is inclined downwardly and is but a short distance from the rib 19, the side faces of which are similarly inclined so as to provide an upwardly extending wedging space. A wedge 33 is forced downwardly in the upwardly flared space between the rib 19 and the base strip 27 so as to force or wedge the brace 20 against the rail 10, thus serving to anchor the rail 10 tightly in the recess below the overhang 12. The wedge 33 is forced downwardly for this purpose by means of a nut 34 threaded on to an upwardly projecting bolt stem 35, the head of which is secured in a recess in a rib 36 in a manner similar to that in the rib 17. Similarly a spring washer 37 may be provided between the nut 34 and the upper face of the wedge 33. Through the above construction, therefore, it is only necessary to slide one flange 13 of the rail 10 beneath the overhang 12, then insert the heads of the bolts 29 and 35 in the recess of ribs 17 and 36 respectively, position the wedges 30 and 33 and tighten them by means of the nuts 31 and 34 whereupon the rail will be automatically wedged tightly in position.

In the modified form shown in Figs. 6 and 7, the brace is formed with a pair of vertical side walls 38 and 39, joined at their edges nearest the rail by an inclined spanning web 40 having an upper flange 41 to wedge against the lower face of the head of the rail 10 and having a lower flange 42 to wedge against the upper surface of the rail flange 18. The outer and lower ends of the vertical walls 38 and 39 are connected by means of a base web or wall 43, the lower edge of which rests on the tie plate 11. The brace is held downwardly and wedged against the rail by means of a wedge 44 having one face bearing

against a downwardly inclined face **45** at the lower end of the vertical web **40** and having the opposite faces wedging against the inclined surface **46** of an outer rib **47** on the tie plate **11**. The wedge **44** is held and forced downwardly by means of a bolt **48** having its head engaged in a rib **49** in the same manner as the engagement of the bolt **29** in the rib **28**. A nut **50** on the bolt **48** is screwed downwardly to force the wedge **44** downwardly and thereby wedge the brace against the rail **10**. The face of the wedge **44** acting against the inclined face **45** of the brace, holds the latter downwardly at the same time as it wedges the brace against the rail.

In Figs. 6 and 7 the invention is shown as applied to a guard rail **51** which is secured to and spaced from the rail **10** by a spacer **52** and bolts **53**. The flanges of the rails are separated by a central rib **54**.

The outer flange of the rail **51** is held downwardly against the tie plate **11** by means of a brace **55** held in place by means of a bolt **56** and bearing downwardly on the outer flange **57** of the rail **51**. In this way the flange **57** is held in place and prevented from rising from the tie plate **11**.

It will be understood, however, that the brace may be used in other positions than those shown in the specific examples given above and that either form may be used wherever the rail is to be held downwardly and laterally. Also that it may be used on canted or on level surface plates.

Various modifications may be made by those skilled in the art without departure from the invention as defined in the appended claims.

What we claim is:—

1. A rail brace having a bottom surface to rest on a base plate, surfaces to engage the under surface of a rail head and a top surface of a rail flange and an opening to receive a holding bolt, said opening having a surface inclined upwardly toward the rail engaging surface to form a lateral wedging surface.

2. A rail holding means comprising a brace having surfaces to engage and wedge against the lower surface of a rail head and the upper surface of a rail flange, a base surface spaced from the rail engaging surfaces, and having the opposite end of said brace inclined upwardly toward said rail in a plane parallel to the edge of said head to form a laterally wedging base, an opening between said base surface and said rail engaging surfaces and means comprising a bolt and holding block engaging the sides of said opening to force said brace downwardly between said base surface and said rail engaging surfaces and means to wedge against the outer inclined surface of said brace.

3. A rail holding means which comprises a brace having rail engaging surfaces acting downwardly and laterally and a base surface spaced therefrom and means comprising a tie plate, a bolt anchored to said tie plate, and a wedge between said rail engaging surfaces and said base surface to wedge the brace downwardly and toward the rail engaging surfaces.

4. A rail holding means which comprises a base plate to support said rail, said base plate having transverse ribs provided with bolt head recesses, a brace having surfaces to engage the rail laterally and downwardly, said brace having an upwardly flaring opening, a bolt extending from one of said ribs upwardly through said opening and a wedge block in said opening and engaging the sides of said opening to be forced and held downwardly on said bolt.

5. A rail holding means which comprises a base plate to support said rail, said base plate having transverse ribs provided with bolt head recesses, a brace having surfaces to engage the rail laterally and downwardly, said brace having an upwardly flaring opening, a bolt extending from one of said ribs upwardly through said opening and a wedge block in said opening to be forced and held downwardly on said bolt and engaging the sides of said opening and a sidewise wedging block between a rib and the outer end of said brace and a bolt for wedging said block downwardly.

6. A brace having an upright wall to abut the lower surface of a rail head with the upper surface of said wall, and to abut the upper surface of the base flange of the rail with the lower surface of said wall, and having side plates extending from said wall to a base plate spanning said side walls, said upright wall having an inturned flange, the edge of said flange forming a flaring bolt head opening with the inner edge of said base plate, the outer edge of said base plate being inclined upwardly toward said upright wall whereby said brace may be wedged downwardly and toward said rail by wedges in said flaring opening and at said inclined outer edge of said base plate respectively.

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