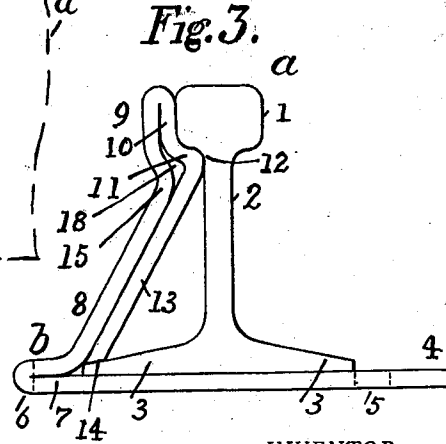
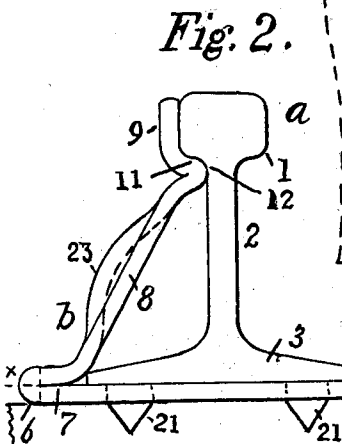
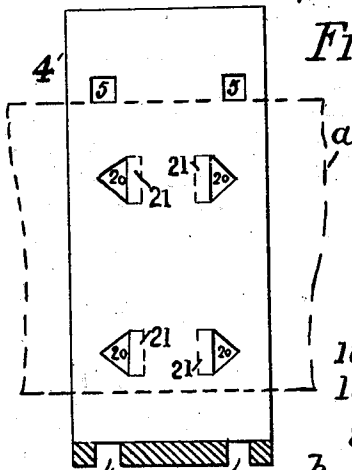
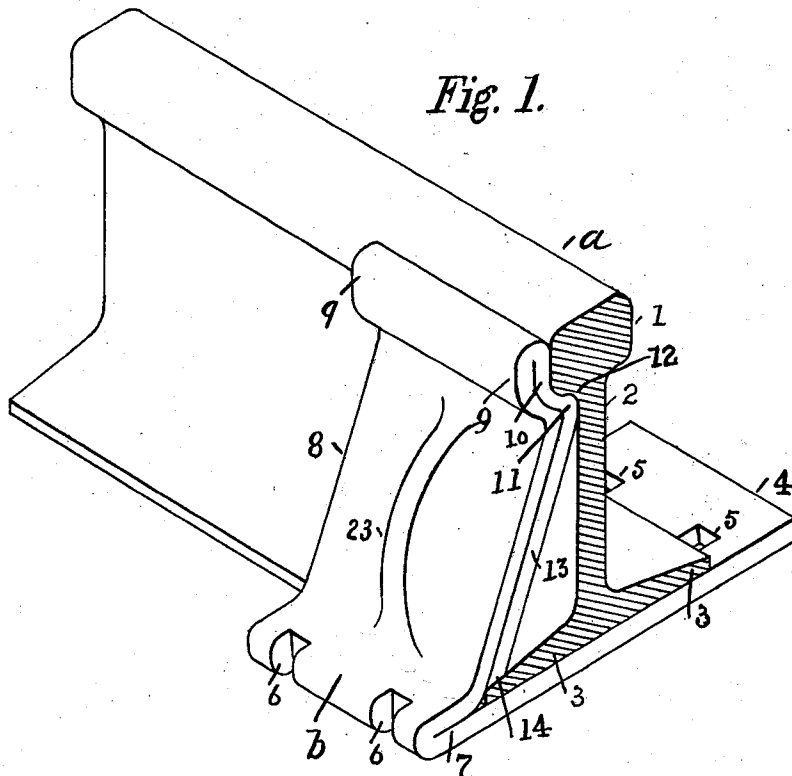


W. F. BOSSERT.
RAILWAY CHAIR AND BRACE.
APPLICATION FILED MAY 12, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

Joseph A. Gately
James E. Lynch.

INVENTOR.

William F. Bossert
BY
Geo. Willis Pence

ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLIAM F. BOSSERT, OF UTICA, NEW YORK.

RAILWAY CHAIR AND BRACE.

SPECIFICATION forming part of Letters Patent No. 747,931, dated December 29, 1903.

Application filed May 12, 1903. Serial No. 156,768. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. BOSSERT, residing at Utica, in the county of Oneida and State of New York, have invented certain Improvements in Railway Chairs and Braces, of which the following is a specification.

The present invention relates to means employed to support railway-rails in position upon the ties on the road-bed. In straight runs of track the rails are fastened to the ties by means of bolts or spikes, which, with the chairs at the ends of the rails, form a sufficient support, but upon curves, where the wheels of the train are forced over upon the outer rail with great force and thrust, more protection is demanded to hold the rail firm and stable.

My invention provides means whereby upon curves the rails are not only secured to the ties, but are provided with a strong and sufficient brace to withstand the thrust of the train when passing rapidly over the rails; and it consists of a plate passing under the rail from the inner to the outer side, provided with slots on the inner side for the reception of bolts or spikes near the inner edge of the rail and upon the outer side returning upon the plate to the outer edge of the rail and then extending upward as a strut in an inclined direction to the rail-tread in a manner to lock therewith and support the same. Notches are cut in the outer edge of the doubled portion of the base for the reception of bolts or spikes.

The combined chair and brace is made in one piece of rolled metal about four inches wide and is bent by machinery into the desired shape, and the spike-holes and notches are made by a templet, so that each piece is like all the others, all of which I will now proceed to describe, and point out in the appended claims.

In the drawings which illustrate the invention, Figure 1 is a perspective view of the chair and brace in position upon a rail. Figs. 2 and 3 are end views of modified forms of the chair and brace. Fig. 4 is a section on line *xx* of Fig. 2, and Fig. 5 is a modification.

Referring to Fig. 1, *a* represents a rail, of which 1 is the tread, 2 is the web, and 3 3 the foot or base, and *b* represents the chair

and brace in position with the rail. The chair and brace *b* is made from a piece of iron or steel of even thickness and width and is preferably cut off from a long flat bar in a suitable length. A portion 4 is left flat for a sufficient length to form a base for the foot 3 of the rail and a turn made, as 7, at which for a short distance the bent-over part is parallel and in contact with the base 4, and then a bend is made at preferably an angle of sixty degrees (although this angle is not strictly essential) with the base 4, inclining toward the rail, and when near the point 12 at the base of the rail-tread the material is given a sudden bend outward at 11^a and then an abrupt bend upward at 9^a and continues straight for a short distance 9 and then returned or doubled upon itself at 9^b at about the level of the top of the tread 1. The material or bar *b* is then made to conform to the inner surface of the portions 9, 9^a, and 8, and its end terminates upon the outer and upper surface of the rail-base 3, and when completed the straight part 10 bears against the face of the tread 1. The concave part fits upon the lower convex corner of the tread, and the rounding shoulder 11 fits into the curved portion part 12 at the junction of the tread with the web. Suitable slots 5 5 are punched in the end of the straight or base part 4 of the brace *b* near the edge of the rail-base 3 for the reception of bolts or spikes, and cuts are made, as 6 6, through the doubled-over part 7, also for the reception of bolts or spikes to secure the brace to the rail-ties. By this construction a combined chair and brace is made which when secured to the rail and tie by bolts holds the rail in a firm embrace and supports the same, as the rail-foot 3 enters the space 14^a, made by the part 4, the inclined strut 8, and its companion strut 13, which is shortened to form the pocket or space 14^a. At the same time the shoulder 11, socket 10^a, and abutment 9 support the rail-tread and fit its outward contour, and any thrust made by the train-wheels to force the rail against the brace is met by the same and resisted.

In Fig. 2 but one strut 8 is formed on the bar *b*, which is provided with the shoulder 11, fitting into the concave 12 at the juncture of the tread with the web, the portion 9 also being of a single thickness and ending at about

the level of the tread. In this case the foot 3 of the rail rests in the angle formed by the base 4 and the struts 8 and is held firmly in place.

5 In Fig. 3 the construction is the same as in Fig. 1, except that the outer strut 8 is not bent at the upper part so abruptly as is the inner shoulder 11, so as to leave an open space 18 between the bend 15 and shoulder 11. By this arrangement an angle is formed which gives additional support to the rail-tread. One or more ribs 23 may be formed upon the struts by forcing the central part outward, as indicated, to further strengthen the same. I form sharp projections 22 in the base portion 4 by forcing parts thereof downward (shown as made three-cornered) in order that when the chair is placed upon a tie T they may be forced thereinto and hold the chair from slipping from its place. It will be seen that the projections are one side of the line of the bolt-holes 5 and 6 in order that the tie may not be split, as it would be by four holes in line with one another in the same, and the points of the projections are made to cut their longest score in the direction of the fiber of the tie instead of across the grain in order not to weaken it.

In the modification shown in Fig. 5 the chair is tied together by the bolt B, which extends through the struts 8 and 13 and the web 2 and has a head D, bearing upon the web, and a nut C upon the outer threaded end. A block A is placed between the nut C and the face of the strut 8 in order to provide a broad base for the nut and distribute the stresses. The block is preferably made of iron. It is intended in this modification to employ the projections in the plate bearing upon the tie.

40 I claim as my invention—

1. A railway chair and brace, consisting of a strip of iron or steel having a plate extending under the rail from one side to the other, bent to return upon itself and then inclined upward as a strut and forming a shoulder under the concave surface at the junction of the rail tread and web, and continuing around the contour of the side of the tread, as set forth.

50 2. A railway chair and brace, consisting of a strip of metal having a plate extending under the rail from one side to the other, bent inward toward said plate and inclined upward as an outer strut toward the under side of the rail-tread and conforming to the contour thereof and returning upon itself in contact with the surface of the tread and the upper part of the web and forming a shoulder at the junction of the tread and web, and terminating at the upper surface and outer end of the rail-foot forming an inner strut in contact with the said outer strut.

60 3. A railway chair and brace, consisting of a strip of metal having a plate extending under the rail from side to side, bent inward toward the plate and inclined upward to the

upper part of the rail, and returning upon itself to the upper surface and outer end of the rail-foot, the upper doubled or looped portion conforming to the contour of the upper part of the web and of the rail-tread, and forming a shoulder at the junction of the tread and web. 70

4. A railway chair and brace, consisting of a strip of metal having a plate extending under the rail from side to side, bent inward toward the said plate, and inclined upward to the upper part of the rail, and returning upon itself to the upper surface and outer end of the rail-foot, the upper doubled or looped portion conforming to the contour of the upper part of the web and of the rail-tread, and forming a shoulder at the junction of the tread and web, with slots and notches for the reception of bolts or spikes. 80 85

5. A railway chair and brace, consisting of a strip of metal having a plate extending under the rail from side to side, bent inward toward the said plate, and inclined upward to the upper part of the rail and returning upon itself to the upper surface and outer end of the rail-foot, the inner side of the upper doubled or looped portion conforming to the contour of the upper part of the web and the rail-tread and forming a shoulder at the junction of the tread and web, while the outer side thereof is separated from the inner part opposite said junction. 90 95

6. A railway chair and brace, consisting of a strip of metal having a plate extending under the rail from one side to the other provided with projections on the under side, bent to return upon itself and then inclined upward as a strut and forming a shoulder under the concave surface at the junction of the rail tread and web, and continuing around the contour of the side of the tread, as set forth. 100 105

7. A railway chair and brace, consisting of a strip of metal having a plate extending under the rail from one side to the other provided with projections on the under side, bent to return upon itself and then inclined upward as a strut and forming a shoulder under the concave surface at the junction of the rail tread and web and continuing around the contour of the side of the tread, with openings and slits for the reception of bolts or spikes, as set forth. 110 115

8. A railway chair and brace, consisting of a strip of metal having a plate extending under the rail from one side to the other provided with projections on the under side, bent to return upon itself and then inclined upward as a strut and forming a shoulder under the concave surface at the junction of the rail tread and web, and continuing around the contour of the side of the tread, with openings and slits for the reception of bolts or spikes, the said projections and openings and slits not being in line with each other, as set forth. 120 125 130

9. A railway chair and brace, consisting of
a strip of metal having a plate extending un-
der the rail from one side to the other pro-
vided with projections on the under side, bent
5 to return upon itself and then inclined up-
ward as a strut and forming a shoulder under
the concave surface at the junction of the
rail tread and rib, and continuing around the
contour of the side of the tread, with a large
10 block on the side of the strut through which

block, the strut and the rail-web extends a
bolt secured by a nut, as set forth.

In testimony whereof I have signed my
name to this specification, in the presence of
two subscribing witnesses, this 25th day of 15
March, 1903.

WILLIAM F. BOSSERT.

Witnesses:

FREDERICK T. FOXENBERGER,
WILLIAM GRAY.