

(No Model.)

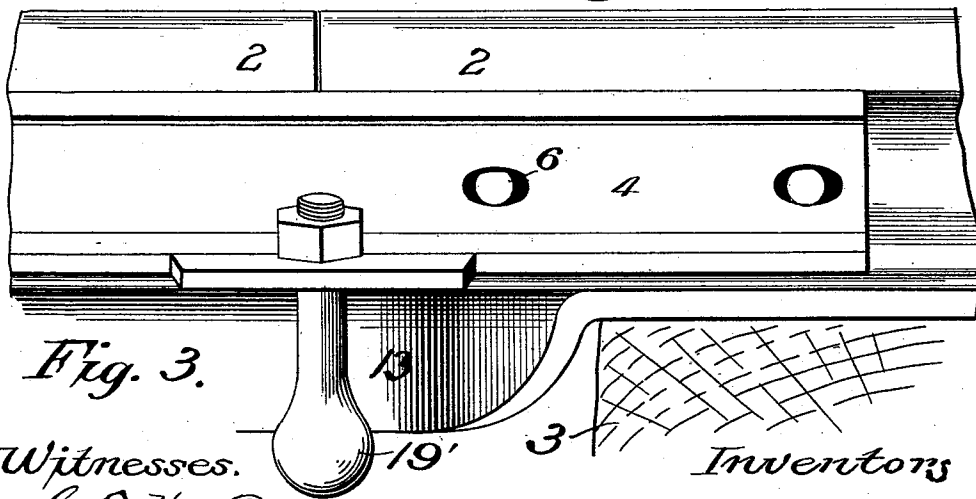
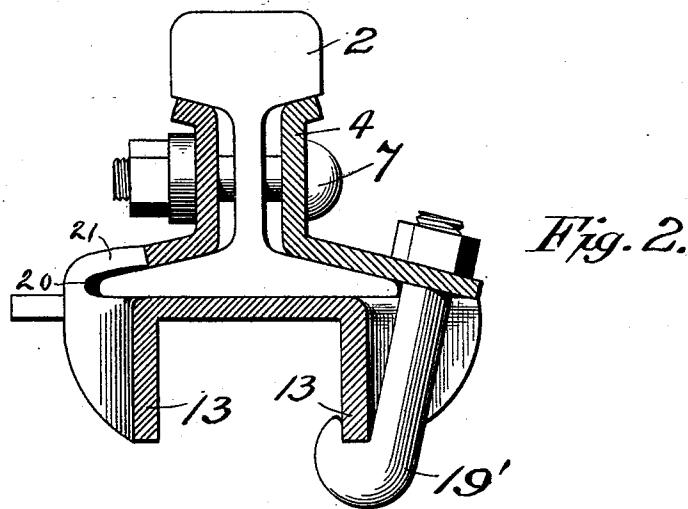
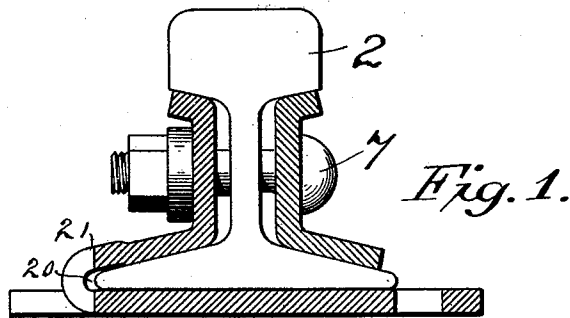
2 Sheets—Sheet 1.

F. H. HEATH & E. P. CALDWELL.

RAIL JOINT.

No. 500,389.

Patented June 27, 1893.



Witnesses.

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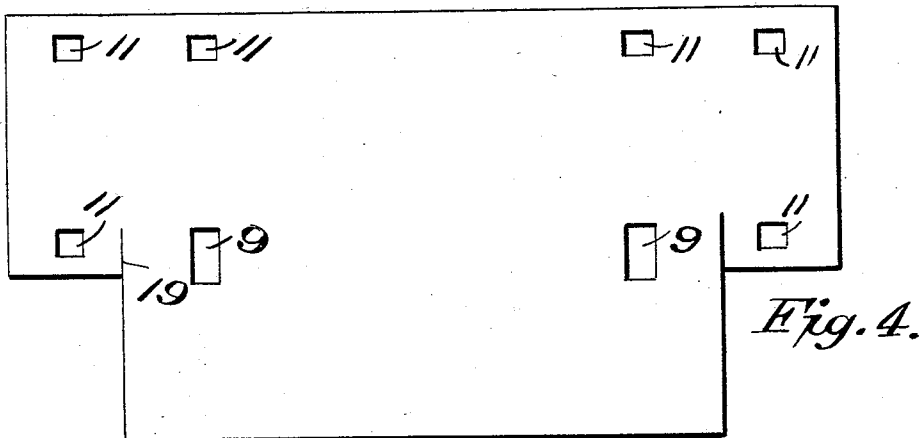


Fig. 4.

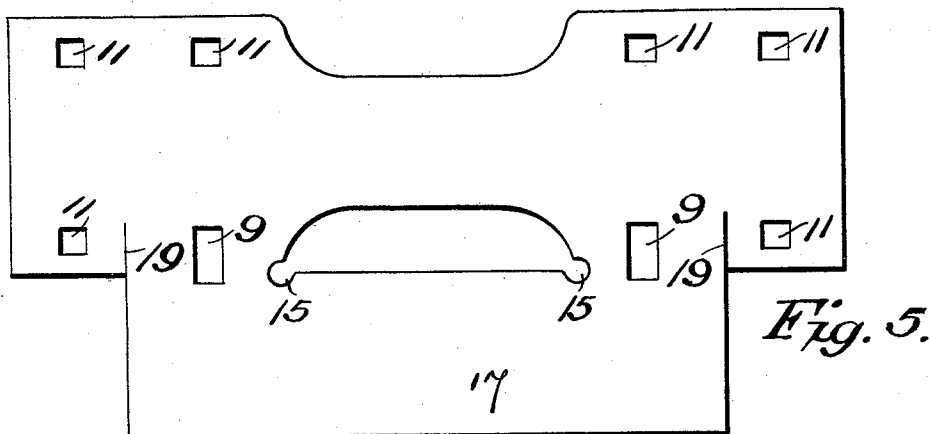


Fig. 5.

Fig. 6.

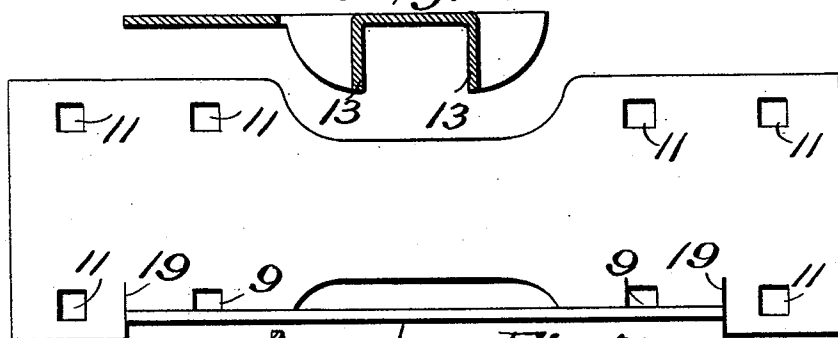


Fig. 7.

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Fig. 8. Frederick H. Heath,
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UNITED STATES PATENT OFFICE.

FREDERICK H. HEATH AND EDWARD P. CALDWELL, OF MINNEAPOLIS,
MINNESOTA, ASSIGNORS TO THE HEATH RAIL JOINT COMPANY, OF
WATERLOO, IOWA.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 500,389, dated June 27, 1893.

Application filed September 6, 1892. Serial No. 445,172. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK H. HEATH and EDWARD P. CALDWELL, both of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and Improved Rail-Joints, of which the following is a specification.

This invention relates to rail-joints, and in particular to a trussed rail-joint formed from sheet or wrought metal; and the object of the invention is to provide a rail-joint which will be reasonably cheap and simple, which will be comparatively light in weight and will occupy but little space, and will at the same time be substantially as strong or stronger than any part of the rails.

Another object of the invention is to provide a rail-joint the main part of which can be formed of steel or wrought iron and can be formed integrally from a single sheet or plate of metal.

The invention consists generally in a combined trussed base-plate and angle-bar formed from a single piece of wrought metal.

The invention consists further in a detachable angle bar adapted for use with said integral part, and provided with means for securing the same in place.

The invention consists further in the constructions and combinations hereinafter described and particularly pointed out in the claims.

The invention will be more readily understood by reference to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a transverse section of a rail-joint embodying our invention. Fig. 2 is a transverse section through the middle of the joint, showing the hooked clamping bolt which may be used for fastening the separable angle-bar. Fig. 3 is a side view of the middle portion of the joint. Fig. 4 shows a blank from which the combined base-plate and angle-iron or bar is formed, the blank being shown with the spike holes. Fig. 5 shows the blank after the trusses have been formed. Fig. 6 is a cross section of the plate shown in Fig. 5. Figs. 7 and 8 are respect-

ively a plan and a cross section showing the plate with the angle iron portion struck up into a vertical position preparatory to finally shaping the angle iron to fit the side of the rail or rails.

In constructing our combined trussed base-plate and angle-iron we provide a sheet of metal, preferably steel, of suitable thickness and cut substantially in the form shown in Fig. 4. Suitable spike holes 9 and 11 are preferably first punched in this plate or blank, and then as shown in Fig. 5, the slots 19 are preferably cut so that when the angle-iron part is turned up, ears or end lugs will be made projecting beyond the line of the angle-iron or bar and each adapted to receive a spike. The holes 15 are then preferably punched and a slot struck in the blank on a line between them. At the next step the trusses 13 are bent down so that the plate then presents the form shown in Figs. 5 and 6. The angle-iron portion 17 is then bent or struck up as shown in Figs. 7 and 8, the bend being made preferably on a line extending about through the middle of the slots 9. The angle-iron portion 17 is then bent over a suitable former, or otherwise brought into substantially the shape shown in Figs. 1 and 2, having the inclined portion adapted to fit against the flange of the rail. This angle iron portion is preferably formed with the outer part marked "21" in Figs. 1 and 2 nearly parallel with the base-plate or at a slightly different angle from the inner part of the angle-iron. The object of this is to permit the use of varying sizes of lengths upon rails, the largest of which will be admitted in the space 20, while the inner part of the angle bar will swing sufficiently to fit the other part to the rail, thus holding the flange of the rail as in a vise and preventing any looseness between the combined base-plate and angle-iron and the rail. The angle-iron 4 may be of the usual construction, and it may be secured to the rail and to the combined base-plate and angle-iron by suitable bolts 7. We may, however, use in addition the hooked clamping bolt 19' as an additional fastening. The hook upon this bolt is adapted

to engage the under side of the truss 13, while the threaded end of the bolt extends up through a hole in an extension of the angle-bar 4, the bolt being secured by a locking nut as shown.

The depending trusses 13 it will be noted are intended to stand between the ties, and the middle portions of the trusses are preferably straight, while their ends are merged into the outer edges of the plate by sharp curves. The result of this construction is the production of a rail-joint which while very light, simple to construct, and comparatively inexpensive, is capable of securely holding the ends of the rails and preventing depression thereof by the passage of trains over the track.

While we have shown and described the depending trusses as arranged at the edges of the base plate and formed by turning down portions of the metal at the edges thereof, it will be understood that we do not limit ourselves to this mode of forming the trusses, as the same may be arranged in an equivalent manner at the center of the plate, or one or both of the trusses may, if preferred, be entirely omitted.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination, with the rails and an angle-iron fitting upon one side of the rails, of a combined trussed base-plate and angle-iron formed integrally of wrought metal, and bolts securing said angle irons to the rails, substantially as described.

2. As a new article of manufacture, a combined base plate and angle-iron formed integrally from a sheet of metal and having a depending truss or trusses, and an angle-iron portion adapted to fit against the flange and side of the rail.

3. The combined base-plate and angle-iron having the end portions adapted to rest upon the ties, a depending longitudinal truss or trusses between said end portions, and an an-

gle-iron portion adapted to fit against the flange and side of a rail, said plate, truss or trusses, and angle-iron portions being formed integrally from a sheet of metal.

4. The combination with the rails, of a trussed base plate, an angle-iron secured to the rails by bolts, and a clamping bolt engaging the truss of said base plate and also engaging said angle-iron, substantially as described.

5. A combined base-plate and angle-iron consisting of a sheet metal plate, an upwardly turned integral angle-iron portion formed on said plate, and the integrally depending trusses, substantially as described.

6. The combined base-plate and angle-iron consisting of the sheet-metal plate provided with the integral longitudinal trusses and the integral angle-iron or bar provided with a vertical portion adapted to fit against the side of the rail, an inclined portion adapted to rest upon the flange of the rail, and a portion adapted when the device is in use to stand at a slight distance from the flange of the rail, for the purpose specified.

7. The combined base-plate and angle-bar consisting of the plate provided with the integral trusses, and the integral angle-iron, said plate also provided with the end projections or ears having spike holes, substantially as described.

8. The combination with the rails, of a sheet-metal base-plate whereon the rails are adapted to rest, the integral depending trusses provided on said plate, the integral angle-iron formed by bending up one edge of said plate, the separable angle-iron 4, and the bolts for securing said angle-iron 4 and said integral angle-iron to the rails.

In testimony whereof we have hereunto set our hands this 3d of September, 1892.

FREDERICK H. HEATH.
EDWARD P. CALDWELL.

In presence of—

C. G. HAWLEY,
F. S. LYON.