

(No Model.)

2 Sheets—Sheet 1.

E. SAMUEL.

COMBINED FOOT AND BRACE FOR RAILWAY RAILS.

No. 483,873.

Patented Oct. 4, 1892.

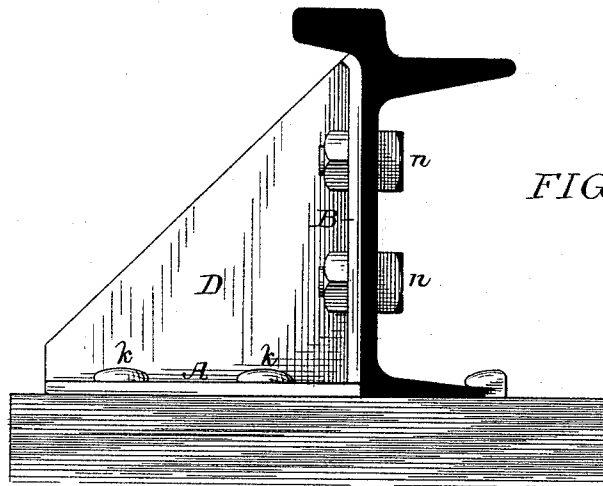


FIG. 1.

FIG. 2.

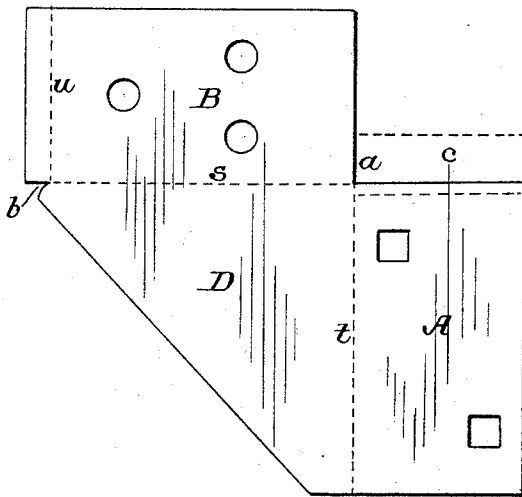
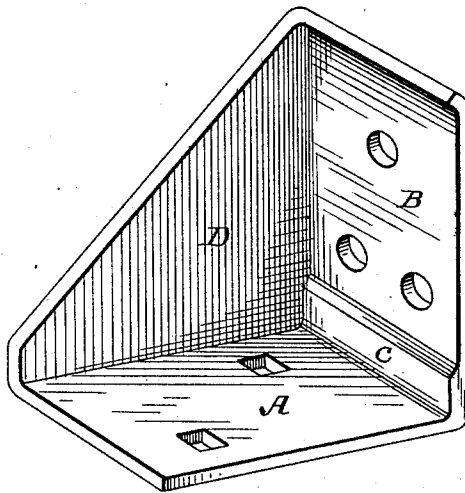


FIG. 3.



Witnesses:

A. V. Groupe
Fred W. Goodwin

Inventor:

Edward Samuel
By his Attorneys
Howson & Howson

(No Model.)

2 Sheets—Sheet 2.

E. SAMUEL.
COMBINED FOOT AND BRACE FOR RAILWAY RAILS.
No. 483,873. Patented Oct. 4, 1892.

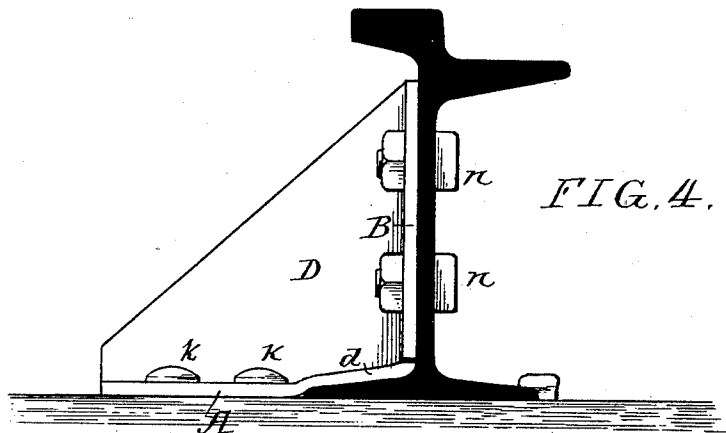


FIG. 6.

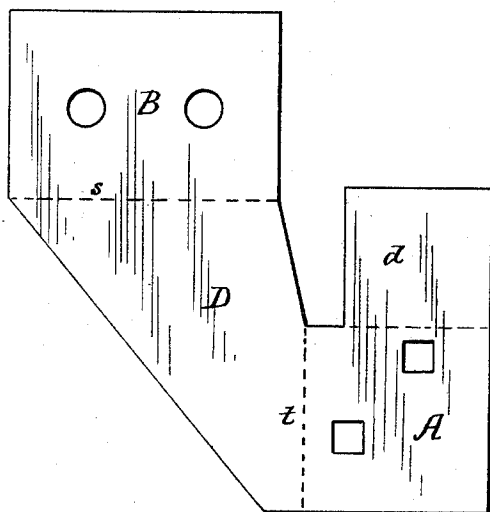
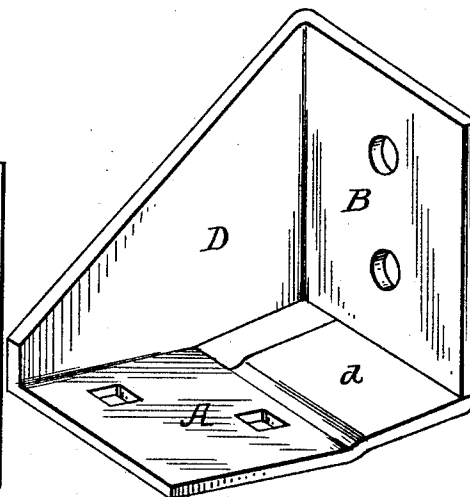


FIG. 5.



Witnesses:
Albert Popkine,
Joe H. Klein.

Inventor:
Edward Samuel
By his Attorneys
Howson & Howson

UNITED STATES PATENT OFFICE.

EDWARD SAMUEL, OF PHILADELPHIA, PENNSYLVANIA.

COMBINED FOOT AND BRACE FOR RAILWAY-RAILS.

SPECIFICATION forming part of Letters Patent No. 483,873, dated October 4, 1892.

Application filed December 26, 1891. Serial No. 416,188. (No model.)

To all whom it may concern:

Be it known that I, EDWARD SAMUEL, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented an Improved Combined Foot and Brace for Railway-Rails, of which the following is a specification.

The object of my invention is to so construct a combined foot and brace for railway-rails that it can be readily bent into shape and, if desired, welded, as fully described hereinafter.

In the accompanying drawings, Figure 1 is a sectional view of a rail, showing my improved foot and brace attached to the rail and secured to a tie. Fig. 2 is a plan view of the blank from which my improved foot and brace is formed. Fig. 3 is a perspective view of the combined foot and brace bent and welded. Fig. 4 is a sectional view of the ordinary girder-rail having base-flanges on both sides of the web, showing the knee or brace as used with this rail. Fig. 5 is a perspective view of the knee shown in Fig. 4. Fig. 6 is a plan view of the type of blank used in making the knee or brace shown in Fig. 5.

The combined foot and brace herein shown in Fig. 1 is especially adapted for use in connection with the rail for which application for patent was filed by me on the 14th day of December, 1891. This improved rail is clearly shown in Fig. 1 of the drawings, and consists of a rail having a head and web and a base-flange at only one side of the web.

The knee or brace shown in Figs. 4 and 6 is adapted to use with any form of rail having a base-flange.

My improved foot, as shown in Fig. 1, can be attached to the opposite side of the web from the flanged side at the cross-ties, so as to form an extended base for the rail and a sufficient brace to withstand any transverse or lateral strains upon the rail.

My improved foot is made from the blank shown in Fig. 2, which has a body portion D, forming the brace of the foot, and two wings A and B, the wing A forming the base of the foot and the wing B forming the vertical flange to which the rail is attached. The blank is bent on the lines *s* and *t*, so that the portions A and B will be at proper angles to

the portion D, and when the foot is attached to the rail, as shown in Fig. 1, bolts or rivets *n n* secure the rail to the foot and spikes *k k* are driven through the openings in the base, firmly securing the base to the tie. The vertical flange is in ordinary cases, connected only to the base through the brace D, as shown in Fig. 1; but where it is wished to strengthen and stiffen the foot the portion B can be welded to the base. When the foot is welded, I extend the blank C (shown by dotted lines in Fig. 1) and cut it at *a*, so that the portion C can be turned up, forming a lip, which can be readily welded to the securing-web B, as shown clearly in Fig. 3.

The chair shown in Figs. 4, 5, and 6 is cut away to allow for the base-flange and may have a portion *d*, which will extend over the rail-flange and under the flange portion B of the brace, and in some instances this portion may be welded to the flange portion B. The brace shown in Fig. 4 may be used in some instances on the base-flange side of the rail. (Shown in Fig. 1.)

I preferably extend the vertical flange B up under the head of the rail, as shown in Fig. 1, to prevent any shearing action upon the bolts which fasten the foot to the rail. To form this extension, I bend the portion B on the line *u* and either crimp the corner formed at its junction with the brace D or cut out a portion of the blank at *b* and weld the two faces together, although it may be made without welding or securing the bent portion to the brace D.

While I have treated this invention as being applicable to girder-rails, there is no reason why the same form of knee and made in the same manner may not be used for kneeing timbers together in any class of work where such knees are required, as in ship-building, bridge construction, or tie-and-stringer-constructed railways.

I claim as my invention—

1. The within-described rail foot and brace, comprising the base portion for bearing on the tie, the vertical securing-flange to which the rail is attached, and a triangular brace at one side extending from the base to the securing-web, the whole being formed from sheet metal in one piece by bending the parts into

proper relation to each other, substantially as specified.

2. The within-described rail foot and brace, made from a single sheet of wrought metal, comprising the triangular brace D, the base A, projecting from the lower portion of the brace, and the vertical securing-web B, projecting from one side of the brace, said vertical securing-web and base being welded together, substantially as specified.

3. The combination of the brace D, securing-web B, extending from one side of the brace, and a base A, extending from the lower portion of the base, with an extension *d*, projecting from the base toward the web, substantially as described.

4. The within-described blank for a rail foot and brace, said blank being of the shape shown and composed of a triangular central portion D, having extensions A and B, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD SAMUEL.

Witnesses:

WILLIAM SELFRIDGE,
HARRY SMITH.