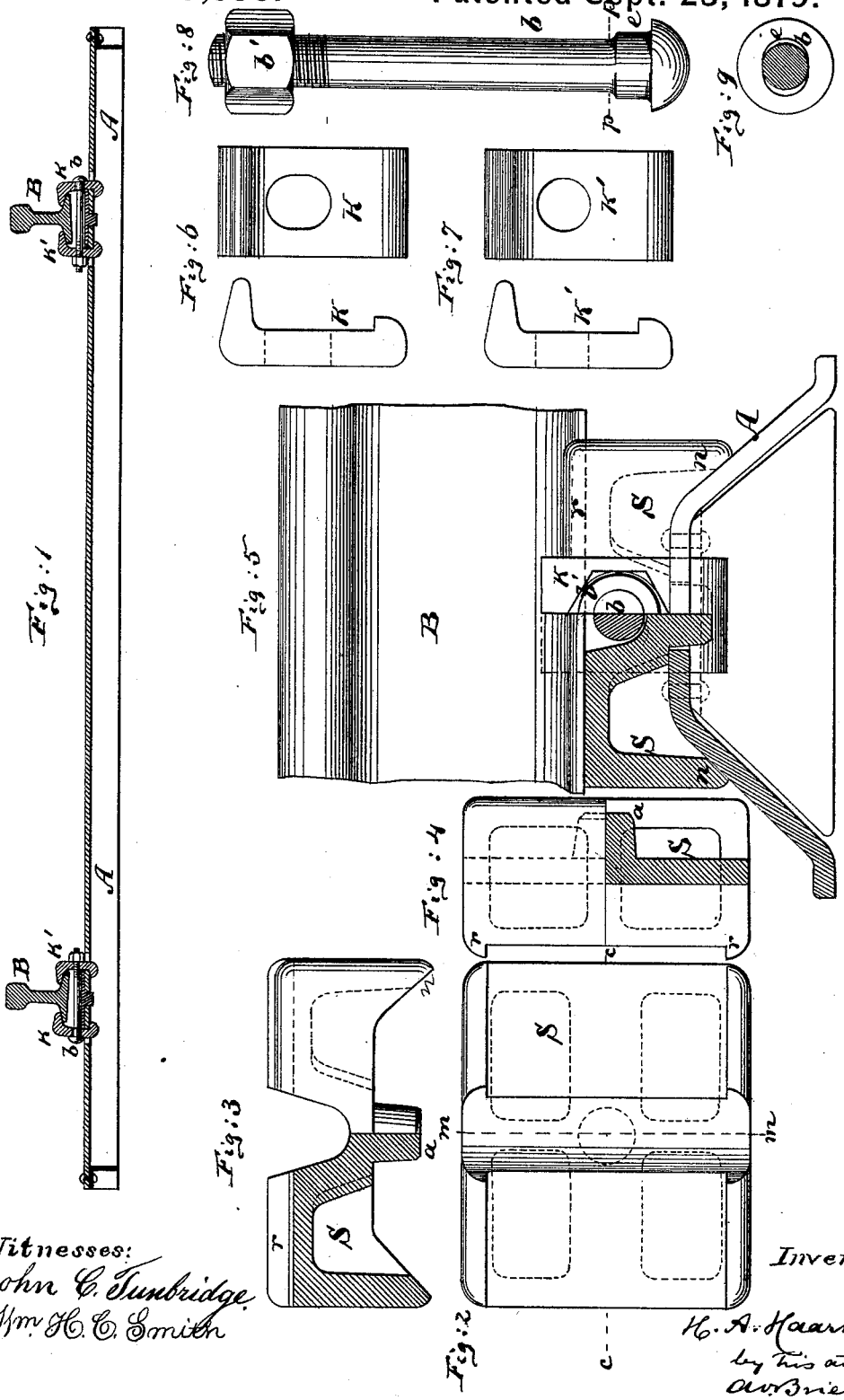
2 Sheets—Sheet 1.

H. A. HAARMANN.

Railway Chair and Fastening.

No. 219,856. Patented Sept. 23, 1879.



Witnesses:
John C. Tunbridge
Wm. H. C. Smith

Inventor:
H. A. Haarmann
by his attorney
A. v. Briesen

2 Sheets—Sheet 2.

H. A. HAARMANN.

Railway Chair and Fastening.

No. 219,856. Patented Sept. 23, 1879.

Fig: 12

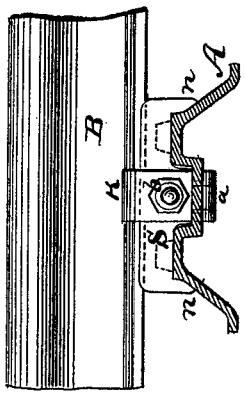


Fig: 13

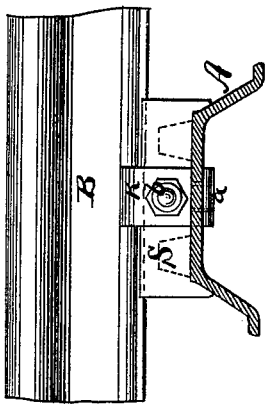


Fig: 10

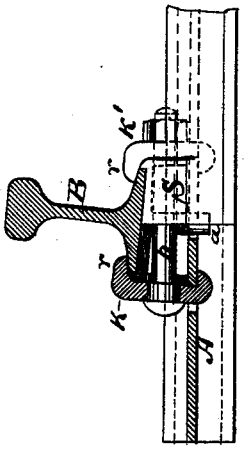
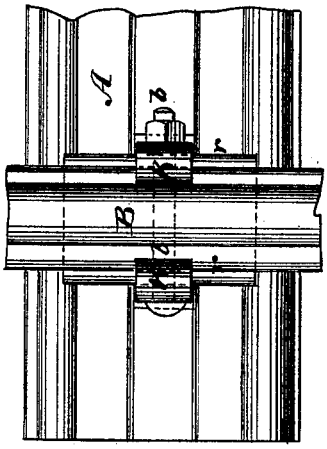


Fig: 11



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Inventor:
H. A. Haarmann
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UNITED STATES PATENT OFFICE.

HERMANN A. HAARMANN, OF OSNABRUCK, PRUSSIA, GERMAN EMPIRE.

IMPROVEMENT IN RAILWAY-CHAIRS AND FASTENINGS.

Specification forming part of Letters Patent No. **219,856**, dated September 23, 1879; application filed June 20, 1879.

To all whom it may concern:

Be it known that I, HERMANN AUGUST HAARMANN, of Osnabruck, Prussia, German Empire, have invented an Improved Railroad-Chair, of which the following is a specification.

In the accompanying sheets of drawings, Figure 1, Sheet 1, is a vertical longitudinal central section through a railroad-sleeper provided with my improved chairs. Fig. 2, Sheet 1, is a detail top view of the railroad-chair. Fig. 3, Sheet 1, is a partial vertical central section on the line *c c*, Fig. 2; and Fig. 4, Sheet 1, a partial vertical central section on the line *m m*, Fig. 2. Fig. 5, Sheet 1, is a partial transverse section of a sleeper provided with my improved chair. Fig. 6, Sheet 1, shows a detail side and end view of one of the outer clamps used on my improved chair for holding the rail; and Fig. 7, Sheet 1, shows similar views of one of the inner clamps. Fig. 8, Sheet 1, is a detail side view of the bolt used with my improved chair; and Fig. 9, Sheet 1, a transverse section on the line *p p*, Fig. 8. Figs. 2 to 9, inclusive, are drawn on an enlarged scale. Fig. 10, Sheet 2, is a partial longitudinal section of a railroad-sleeper provided with a modification of my improved chair. Fig. 11, Sheet 2, is a top view of such chair, showing it attached to a sleeper and supporting a rail. Fig. 12, Sheet 2, is a vertical transverse section of a sleeper provided with a modification of my chair; and Fig. 13, Sheet 2, a similar view showing a sleeper of different form.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to an improved railway-chair on which the rails of a track may be inclined at an angle toward each other, even though the sleepers are perfectly level.

My improved chair is of simple construction, allows for the expansion and contraction of the rails, and permits their ready removal.

The invention consists, principally, in providing a railroad-chair with an inclined upper face, and with means for securing the rail to the chair, and for securing the chair to the sleeper, all as is hereinafter more fully described.

The invention also consists in the details of construction hereinafter more fully pointed out.

With special reference to Figs. 1 to 9, the letter A represents one of the sleepers of a railroad, made of metal or equivalent material. This sleeper I prefer to make of the form shown in Fig. 5—that is to say, with inclined sides, horizontal top, and hollow base. It has, therefore, substantially the form of a truncated inverted letter **V**.

S is my improved railroad-chair. The same is made of metal or equivalent material, and straddles the sleeper A. Its lower face corresponds in shape to the upper face of the sleeper, it being provided with downwardly-projecting lugs *n n*, having inclined inner faces, which bear against the inclined sides of the sleeper. I may also provide said chair with a downwardly-projecting central plug, *a*, which enters a corresponding hole in the sleeper, and serves to prevent the displacement of the chair.

The upper face of the chair A is adapted to receive the rail B of the railroad-track. This face is made slightly inclined toward the center of the track, so that the two rails of a track are inclined toward each other. At its sides the chair S is provided with two upwardly-projecting ribs, *r r*, between which the lower flange of the rail B rests, and which prevent lateral displacement of the rail on the chair.

K K′ are, respectively, the outer and inner clamps for attaching the chair to the sleeper, and for holding the rail B between the ribs *r r* of the chair. These clamps are L-shaped, (see Figs. 6 and 7,) and pass with their lower ends through slots which are cut through the sleeper A at opposite sides of the chair S. With their upper bent ends the clamps K K′ pass over the ribs *r r* and over the lower flange of the rail B, thereby preventing the tilting of the rail.

The clamps K K′ are locked to the chair S by a bolt, *b*, which passes through holes in said clamps, and through a transverse cavity in the chair S. By screwing a nut, *b′*, upon one end of this bolt, the sleeper, chair, and clamps are intimately and firmly connected.

The clamps K K′ are, at their lower ends, provided with a small lateral projection, which engages under the lower face of the sleeper, (see Fig. 1,) and prevents the clamps from being withdrawn from the sleeper before the nut *b′* is removed from the screw-bolt.

I prefer to make the hole for the reception

of the screw-bolt in the clamp K oval or angular, and to provide the bolt *b* with a corresponding oval or angular shoulder-piece, *e*, (see Figs. 8 and 9,) which prevents the turning of the bolt.

It will be seen that by my improved railway-chair the rail B of the track may be set at any desired inclination by making the upper face of the chair S of a corresponding inclination. Moreover, as the clamps K K′ do not necessarily bear upon the lower flanges of the rail B, but pass over the upper edges of the ribs *r r* and over the flanges of the rail, the rail is not necessarily prevented from freely lengthening and contracting under the influence of the temperature.

In the modification shown in Figs. 10, 11, and 12 the sleeper A is grooved lengthwise, and the chair S partly sunk into such groove.

In Fig. 13 the construction is the same as that shown in Fig. 5; but the sides of the sleeper A are inclined to a less degree.

I claim as my invention—

1. The combination of the hollow sleeper A with the chair S, which straddles such sleeper, and with the clamps K K′, bolt *b*, and nut *b′*, the clamps K K′ passing through apertures of the sleeper, all being so arranged that by the clamps K K′, bolt *b*, and nut *b′* the chair is attached to the sleeper and a rail to the chair, substantially as specified.

2. The combination of the sleeper A with the chair S, having inclined face, downwardly-projecting lugs *n n* at its lower side, and ribs *r r* at its upper side, and with clamps K K′, bolt *b*, and nut *b′*, substantially as specified.

This specification signed by me this 14th day of May, 1879.

HERMANN AUGUST HAARMANN.

Witnesses:
CARL T. BURRHARDT,
MARKUS RATTEN.