H. A. HAARMANN.
Railway Track.

No. 201,667. Patented March 26, 1878.

*Fig. 1.*

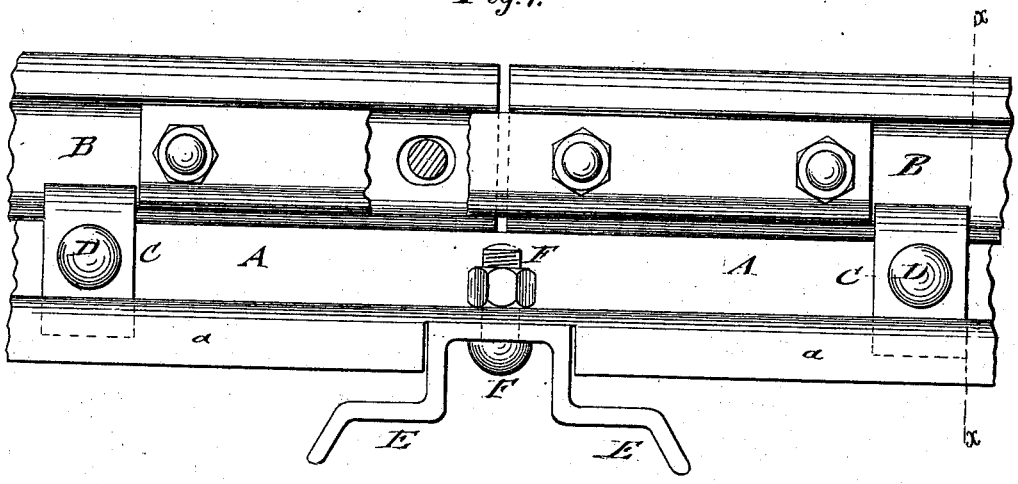
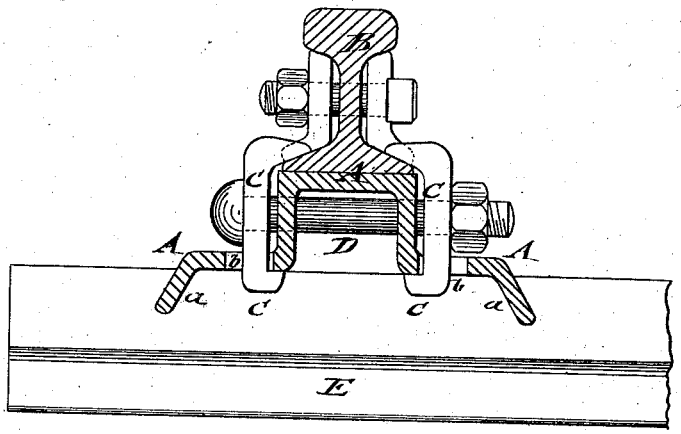



*Fig. 2.*

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# UNITED STATES PATENT OFFICE.

HERMANN A. HAARMANN, OF OSNABRÜCK, PRUSSIA.

## IMPROVEMENT IN RAILWAY-TRACKS.

Specification forming part of Letters Patent No. **201,667**, dated March 26, 1878; application filed February 11, 1878.

*To all whom it may concern:*

Be it known that I, HERMANN AUGUST HAARMANN, of Osnabrück, Prussia, have invented a new and Improved Railway Construction with Iron Bearers, of which the following is a specification:

In the accompanying drawings, Figure 1 represents a side elevation of my improved railway construction with iron bearers, being partly in section. Fig. 2 is a vertical transverse section of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

This invention is designed to furnish an improved system of railway construction that dispenses with wooden cross-ties, and furnishes a solid and durable track for the common gage and for narrow tracks. The bearers furnish a certain spring to the rail, and are strong and durable, requiring less expense for repairs than the wooden cross-ties.

The invention consists of a longitudinal box-shaped bearer with broad base, forming the support for the rail, which is secured thereto by clamps and cross-bolts. The longitudinal bearer is supported on lateral iron cross-ties or sleepers by means of side recesses and fastening-bolts.

Referring to the drawings, A represents a longitudinal bearer with box-shaped upper part and broad base, with outwardly-sloping sides *a*, which bearer serves as a longitudinal support for the usual railway-rails B, the ends of which meet midway on the ends of the bearer, so as to alternate with the joints of the bearers. The bearer A is placed with its sloping sides into the ballasting material, which fills, moreover, the box-shaped upper portion of the bearer. The rails B are rigidly held in position on the bearers A by clamps C, at opposite sides, that bind over the base of the rails and pass through recesses *b* of the broader base of the bearer, being laterally connected by fastening screw-bolts D. The bolts connecting the clamps pass through the vertical walls of the box-shaped upper portion of the bearer at a neutral portion of the same.

The nuts of the screw-bolts may be prevented from getting loose by any suitable nut-lock of approved construction.

The longitudinal bearers A are supported at the joints, and also at the joints of the rails, by iron cross-ties or sleepers E, of the same shape as the bearers, the lower sloping sides of the bearers A being recessed at the points where they rest on the sleepers E, so as to fit on the top parts of the same. The base portion of the bearer A is also connected to the box-shaped top of the sleeper E by fastening-bolts F.

The recessed base of the bearer, which is thus attached to the sleepers, furnishes a rigid and reliable connection, which also prevents any longitudinal displacement of the rails.

The rails are made of Bessemer steel, as light as possible, and are jointed in the usual manner by fish-plates and cross-bolts. The clamps by which the rails are secured to the bearers are made slightly inclined at the under side of their heads, so as to correspond to the inclination of the rail-base, and slide upon the same on tightening the screw-bolts, so as to effect a firm pressure on the rail and a solid connection of the rail with the bearer. This fastening prevents any disengagement of the parts (owing to the inevitable vibrations) in a reliable and more effectual manner than in the present method of spiking the rails to their ties.

For curves of the track, the bearers are bent by a specially-constructed machine on the same principle as the machines for bending rails. This system of rail-supports and sleepers is of superior strength and durability, and combines a certain degree of elasticity with simplicity, cheapness, and solid construction.

I am aware of the existence of a rolled-iron sleeper, the top of which serves as a bearing-surface for fixing the rail or chair, while its depth and the form of the sides secure at once both strength, elasticity, and sufficient support.

I am also aware that it is not, broadly, new to support railroad-rails upon longitudinal bearers which are secured to cross-ties.

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

1. The longitudinal metallic bearer A, hav-

ing box-shaped top part, broad-apertured base, and sloping lower sides, and the removable rail-clamps C and transverse bolts D, in combination with the rail B and cross-tie or sleeper E, as and for the purpose set forth.

2. The hollow metallic cross-tie or sleeper E, in combination with the longitudinal rail-bearer A, seated thereon and secured thereto, as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 15th day of December, 1877.

HERMANN AUGUST HAARMANN.

Witnesses:
LUDWIG HAARMANN,
A. M. SMIER.