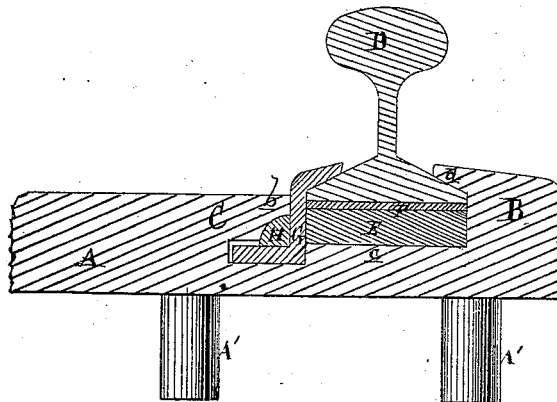
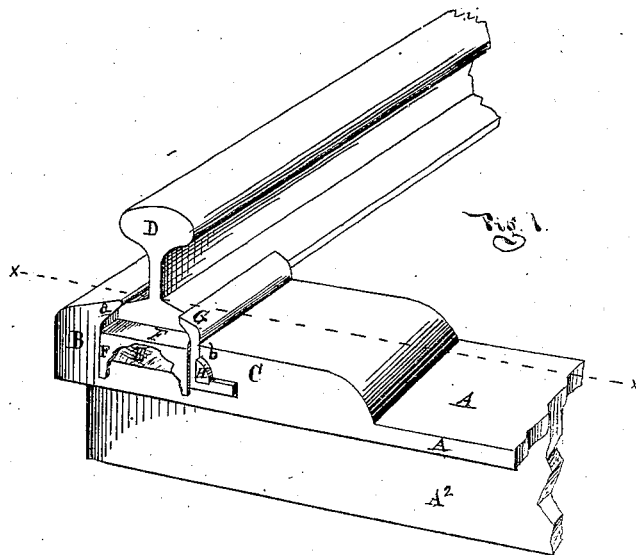


112805

S. M. GUEST.

RAIL TIE & FASTENER

PATENTED MAR 21 1871



ATTEST

Fredrick Ebert
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INVENTOR

Samuel M. Guest
per attorney
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United States Patent Office.

SAMUEL M. GUEST, OF YPSILANTI, MICHIGAN.

Letters Patent No. 112,805, dated March 21, 1871.

IMPROVEMENT IN RAILWAY-RAIL CHAIRS.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that I, SAMUEL M. GUEST, of Ypsilanti, in the county of Washtenaw and State of Michigan, have invented a new and useful Improvement in a Rail-Joint; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is a perspective view of my improved rail-joint, forming part of an iron cross-tie or sleeper.

Figure 2 is a vertical section on the line *x x* in the first figure, but showing the adaptation thereof to a wooden sleeper.

Like letters indicate like parts in each figure.

The nature of this invention relates to an improved method of joining and supporting the ends of railway-bars, alike applicable to railways having sleepers of wood or iron, in the latter case the chair being cast with the sleeper.

The invention consists of a peculiarly-formed iron chair, provided on its under side with studs for insertion in a wooden sleeper, when such are used, or cast with and making part of an iron sleeper.

Also, in connection with such chairs, the employment of a rubber or other elastic cushion under the rail-foot, with a keeping and protecting plate interposed between the cushion and rail-foot.

Also, in a clamp and key, arranged to secure the rails immovably in the chair, and yet with sufficient elasticity to obviate the destructive effects of the hammering of the wheels of passing trains at the joints.

In the drawing—

A represents a plate or table, on which is cast, at one end, a shoulder, B, having a projecting lip or flange, *a*, whose under side conforms to the outline of the upper side of the rail-foot.

C is another shoulder on the plate A, having a curved lip or flange, *b*, projecting toward the first in the form shown, but on a lower plane, and far enough from it to receive the foot of the rail D.

E is a rectangular block of rubber or other elastic material extending across the plate, and whose width is that of the rail-foot, lying on a seat elevated above the general plane of the plate A, shown at *e* in fig. 2.

Over the elastic cushion is placed a thin sheet-metal plate, F, of the same width, but having its ends turned

down to clamp the edges of the plate A, retaining the cushion in place as well as protecting it from the elements and destruction by gravel entering from the ballast under the compressive action of the rail.

G is a double angle-iron clamp of the section shown, its lower flange entering under the overhanging end of the shoulder C, while its upper flange forms a chair-clamp for one edge of the rail-foot.

H is a key, slightly tapered, as is also the way in which it travels, on the under face of the lip *b*, between which and the lower angle of the clamp G it is inserted.

The cushion and plate F being in place, the rail-foot is inserted under the flange of the shoulder B.

The clamp G is then longitudinally slipped to place, when the key H is driven in, wedging the rail or rails between the clamp G and flange *a*.

The key should be of wrought iron, with or without a head, and of such length that its point may project from the chair, so as to be turned down to secure it from working loose. The advantages of such a rail-joint will readily be conceded, inasmuch as expansion and contraction of the rails and an elastic resistance to the percussive action of passing trains are fully provided for, while the rails are firmly held in the chair.

If the chairs are to be applied to wooden sleepers, I cast the plate A of the chairs with two or more studs, *A'*, projecting down therefrom to insert in corresponding openings in the sleeper, or they may be spiked down in the usual manner.

Where an iron sleeper is to be made, I cast it in a T-form, the table or horizontal part forming the plates A, and with a vertical web, *A''*, projecting below.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A rail-chair, having the flanged shoulders B C cast in one piece with the base-plate A, as herein described, in connection with the elastic cushion E, covering plate F, clamp G, and key H, arranged and operating in the manner and for the purpose set forth.

2. The combination of two rail-chairs, constructed as herein described, with a cast-iron cross-sleeper, as and for the purpose set forth.

SAMUEL M. GUEST.

Witnesses:

H. FRED. EBERTS,
MARTHA STEWART.