J. R. NEFF.
Rail-Chair.

No. 210,705. Patented Dec. 10, 1878.

Fig. 1

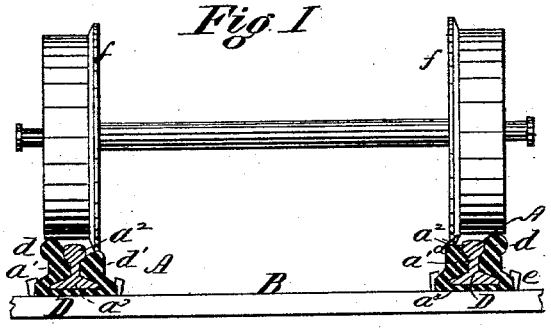
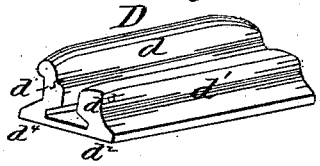


Fig 2



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UNITED STATES PATENT OFFICE.

JOHN R. NEFF, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN RAIL-CHAIRS.

Specification forming part of Letters Patent No. **210,705**, dated December 10, 1878; application filed June 1, 1878.

To all whom it may concern:

Be it known that I, JOHN R. NEFF, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Continuous Rail-Joint and Railway-Chair; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a transverse vertical section of railway-rails held in position by my improved chair. Fig. 2 is a perspective view of the chair.

My invention has for its object to provide a joint which shall serve as a chair or fastening for railway-rails, and also as a means of making such rails in effect continuous, so as to avoid the jolting and jarring incident to passing wheels over an opening or space between two adjacent rails.

As is well known railway-rails are subject to frequent expansion and contraction under changes of temperature, affecting their length to such an extent as to diminish and increase the distance between adjacent ends of rails, and in the latter case produce jolting, jarring, and jumping in the cars passing over them.

It is also well recognized that the adjacent ends of such rails should be connected with each other by a plate, bar, or equivalent joint, so as to keep them truly in line and prevent any divergence, as well as to give stability and steadiness to said rails.

It is still further well understood that the jarring or vibration incident to the passage of a train of cars over a railway has the effect of loosening the nuts and bolts of fish-plates or equivalent fastenings.

My invention aims to correct the discomfort incident to spaces between the ends of rails, and the trouble, loss, and danger arising from the loosening of the nuts and bolts of rail-joints, by providing a device which shall be at once a bridge-joint between the ends of rails, making these latter in effect a continuous rail, and also a fastening to prevent divergence or other erratic movement of the ends of such rails.

My invention then consists of a device which, without the use or employment of bolts, nuts, wedges, or other like devices, forms in itself a bridge-joint between and a fastening for the ends of railway-rails.

Referring to the accompanying drawing, A A designate the railway-rails commonly employed, and B B the cross-ties or sleepers upon which such rails rest.

D, Fig. 2, represents my rail joint and chair, consisting of a double rail with a central inverted T-slot, d^1, for the reception of the ends of the rails A A.

d and d^1 represent the two rails which form the joint and chair, being connected by a base-plate or bottom-piece, d^2. Said base extends outwardly on each side beyond the rails to form feet, over which the heads of the spikes e e, which are used for fastening the device to the cross-ties, extend.

The rail d, as is shown, is a trifle elevated on its upper surface above the top of the rails A A, while the rail d^1 is considerably lower than the top of such rails A A. Each of the rails d d^1 has its ends rounded or tapering, for a purpose hereinafter described.

The method of securing the rails in this improved chair and fastening is simply to slide the ends of such rails into the T-slot d^1, and then fasten the device to the cross-ties by the spikes e e; or they may be made fast by the spikes first, and the rails slid into such grooves afterward.

The car-wheels designed to run upon the rails provided with my improved joint and chair should have their flanges square-faced, as shown at f, or they may have both a tread of extra width and a square-faced flange.

Where the wide tread-wheels are employed, the wheels in passing from one rail A to another will ride upon the rail d, rising and descending by means of the rounded or tapered ends in such manner as to cause no perceptible motion, and riding as smoothly as though the rails A A were one continuous and unbroken rail.

The rail d^1, constructed as shown, is employed in connection with rail d for the flange of the car-wheel to ride upon in passing a joint, said rails being high enough to elevate the wheel in passing over it out of contact with the rails A A.

I design to make the joint and chair in one piece, either cast or rolled, the central groove, d^4, being of such width and depth as to receive the ends of the rails A A snugly, and hold them securely therein without the employment of any bolts, nuts, wedges, or like devices, which increase the expense of construction, and destroy or impair the security of the joint by their tendency to loosen under jarring or vibration.

It will be observed that the inner side of each of the rails d d^1 is projected or formed with a cheek-piece, d^5, which enters the grooves on the sides of the rails A A, so as to rest against the webs a^1 of such rails, and between the head a^2 and foot a^3, and thereby to hold the rails firmly and steadily without necessitating any cutting, boring, or other mutilation of the latter.

What I claim as my invention is—

In combination with the rail ends a a, the rail joint and chair made in one piece, having a central T-groove for the reception of the ends of the rails, said chair embracing the rails closely on both sides and at the base, its outside part being in the form of a rail, its upper surface slightly elevated above the top of the rail, and its inside part, d^1, elevated and adapted to receive the flange of the wheel, thus forming a continuous rail-joint, as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 25th day of May, 1878.

JNO. R. NEFF.

Witnesses:

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CHAS. F. VAN HORN.