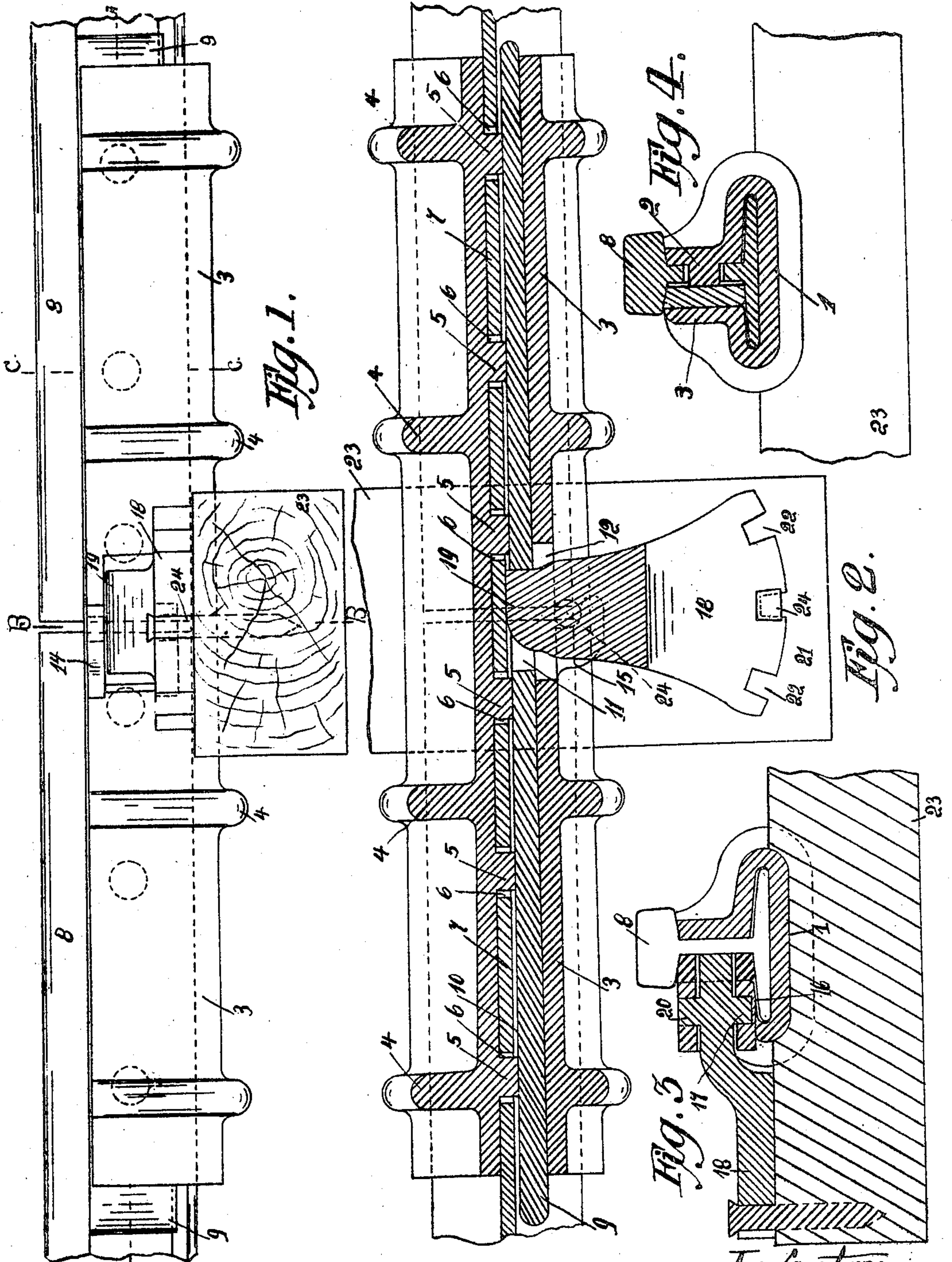


No. 798,395.

PATENTED AUG. 29, 1905.

N. P. COWELL.
RAIL JOINT.

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UNITED STATES PATENT OFFICE.

NEWELL P. COWELL, OF McKEES ROCKS, PENNSYLVANIA.

RAIL-JOINT.

No. 798,395.

Specification of Letters Patent.

Patented Aug. 29, 1905.

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To all whom it may concern:

Be it known that I, NEWELL P. COWELL, a citizen of the United States of America, residing at McKees Rocks, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in rail-joints; and the invention has for its primary object to dispense with the use of nuts and bolts.

Another object of this invention is to provide a rail-joint in which the present type of rails can be secured together.

The invention aims to provide a rail-joint which will be strong and durable and a great saving in maintenance.

Briefly described, my improved rail-joint comprises a casting or forging which forms a chair for the adjoining ends of two rail-sections. The chair is provided with integral fish-plates which are braced by transverse ribs, and to secure the confronting ends of two rail-sections within the chair I employ a novel form of wedge and means for locking the wedge within the chair. In constructing my improved rail-joint I have considered the expansion and contraction of the metals, the lateral movements of the rails, together with the vibratory stresses that are experienced in all rail-joints.

A particular feature of my invention resides in employing rails of the present construction, and I employ the apertures formed in the web portions of the rails for preventing any longitudinal movement of the rails within my improved chair. The rail-joint as constructed by me prevents any vertical movement of the rail-sections, whereby a great saving to the rolling-stock is effected and its maintenance is reduced to a minimum.

Reference will now be had to the accompanying drawings, forming a part of this application, wherein like numerals of reference designate corresponding parts throughout the several views, in which—

Figure 1 is a side elevation of my improved rail-joint. Fig. 2 is a longitudinal transverse sectional view taken on the line A A of Fig. 1. Fig. 3 is a cross-section view taken on the line B B of Fig. 1, and Fig. 4 is a similar view taken on the line C C of Fig. 1.

To put my invention into practice, I employ

a chair which is preferably constructed of a forging or casting of a shape substantially that illustrated in the accompanying drawings. The chair comprises a base portion 1, having integral fish-plates or splice-bars 3. These "fish-plates," as they will be hereinafter termed, are braced by the peripheral ribs 4, arranged the entire length of the chair. The fish-plate 2 upon its inner face is provided with a plurality of integral or detachable lugs or pins 5, which are spaced apart corresponding to the apertures 6, formed in the web portions 7 7 of the rail-sections 8 8. The lugs or pins 5 are made of a smaller diameter than the apertures in which they reside to allow for the expansion and contraction of the metal.

The reference-numeral 9 designates a wedge-shaped bar which I drive into the rail-joint between the web portions of the rails and the fish-plate 3, and by referring to Fig. 2 of the drawings it will be observed that the lugs or pins 5 project slightly beyond the web portion of the rails and that when the wedge-shaped bar 9 is placed in the chair a small space 10 is created between the web portions of the rails and the one side of the wedge-shaped bar 9 to permit the expansion and contraction of the rails.

In order to lock the wedge-shaped bar 9 within the rail-joint and prevent the same from becoming disengaged therefrom, I have provided the wedge-shaped bar 9 centrally of its length with a slot 11, and centrally of the length of the fish-plate 3 I have provided a slot 12, through which the locking mechanism, which will be hereinafter described, protrudes.

The fish-plate 3 adjacent to the slot 12 is provided with the vertically-alined hook members 14 and 15. The hooked member 15 is formed with a seat 16 to receive the depending pin 17 of a locking-lever 18. This locking-lever is substantially of a bell shape in top plan view and has its one end, as indicated at 19, formed in a plane higher than its opposite end. (See Fig. 3.) The locking-lever 18 is also provided with an upwardly-extending pin 20, which alines vertically with the pin 17, and these pins are adapted to engage in the hooked members 14 and 15 of the chair. The one end of the locking-lever, as designated by 19, is adapted to protrude through the slots 11 and 12 and engage the one edge of the slot 11, formed in the wedge-shaped

bar 9, while the opposite or enlarged end 21 has a plurality of notches 22 formed therein, which are employed for locking the lever 18 in engagement with the cross-tie 23, which supports my improved rail-joint. A spike 24 passes through one of the slots and is secured in the cross-tie 23. By this form of locking means I am enabled to tighten or more firmly secure the wedge-shaped bar 9 within the chair should the same become loose on account of the continuous passage of rolling-stock over the joint, and to accomplish this it is only necessary to remove the spike 24 and pry or move the locking-lever 18 further (the same being pivoted by the pins 17 and 20) and then secure a spike in the cross-tie in such a manner as to engage in one of the notches 22.

My improved rail-joint permits of the present type of rails being used, dispensing with the expense incurred by shearing the confronting ends of two rail-sections, which has heretofore been the practice in some instances.

While I have herein shown the preferred manner of constructing my improved rail-joint, it will of course be understood that the same may be made of any desired length and of a sufficient weight to thoroughly brace the rail-sections.

It will be noted that various other changes may be made in the details of construction without departing from the general spirit and scope of the invention.

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

1. The combination with the ends of two rail-sections, of a chair, fish-plates carried by said chair, a plurality of pins carried by one of said fish-plates and adapted to engage in apertures formed in the web portions of said rails, a wedge-shaped bar adapted to be interposed between said pins and one of said fish-plates, a locking-lever pivotally mounted upon said chair and adapted to engage said bar, and means for locking said lever in engagement with said bar, substantially as described.

2. The combination with the ends of two rail-sections, the web portions of said rail-sections having apertures formed therein, of a chair, fish-plates carried by said chair, a plurality of pins carried by one of said fish-plates and adapted to engage in said apertures, a wedge-shape bar interposed between said pins and one of said fish-plates, said wedge-shaped bar having a slot formed therein, a lever detachably pivoted to said chair, and adapted to engage in said slot, and means for locking said lever in engagement with said wedge-shaped bar, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

NEWELL P. COWELL.

Witnesses:

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