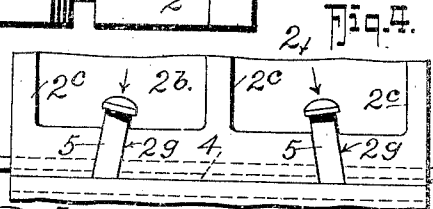
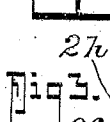
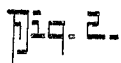


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Patented May 24, 1910.



WITNESSES:

WITNESSES:  
John T. Schrott  
Ella McCormick

INVENTOR

Charles Malitte.

B:

Fred G. Dietrich & Co.  
ATTORNEYS

# UNITED STATES PATENT OFFICE.

CHARLES MALITCH, OF McKEES ROCKS, PENNSYLVANIA.

## RAIL-CHAIR.

958,964.

Specification of Letters Patent.

Patented May 24, 1910.

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*To all whom it may concern:*

Be it known that I, CHARLES MALITCH, residing at McKees Rocks, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Chairs, of which the following is a specification.

My invention relates to that type of rail joints of the boltless construction, embodying a joint chair and wedge devices for retaining the rail end in place in the chair.

The invention primarily has for its object to provide a very simple and effective construction of rail joint which can be easily and cheaply manufactured, and which will readily and effectively serve its intended purposes. To this end the invention provides a metallic chair to rest on and be recessed into the ties, the chair having a chamber to receive the rail ends and also to receive a wooden bed plate upon which the rail ends rest. The rail receiving chamber has parallel walls paralleling the web of the rail and spaced therefrom to receive wedge blocks of wood to retain the rail centrally in the chair while at the same time giving sufficient elasticity to the joint to prevent loosening and pounding of the parts. Means are also provided to prevent longitudinal creeping of the chair on the tie and means are also provided for retaining the wedges in position. Means are also provided to prevent lateral movement of the chair and to take up the strains on the tie recess walls.

In its more specific nature, the invention includes those novel details of construction, combination and arrangement of parts all of which will be first fully described and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which:—

Figure 1, is a perspective view of the invention. Fig. 2, is a horizontal section thereof. Fig. 3, is a cross section on the line 3—3 of Fig. 1. Fig. 4, is a detail side elevation of a part of the invention.

Referring now to the accompanying drawings, in which like numerals and letters of reference indicate like parts in all of the figures, 1—1 designate the rails whose ends abut one another and rest in the chair 2. The chair 2 comprises a base 2<sup>a</sup>, and a pair of upwardly extending parallelly disposed webs 2<sup>b</sup>—2<sup>b</sup>, whose inner faces 2<sup>c</sup> lie in paral-

lel planes which, however, are not parallel to the central vertical longitudinal plane of the chair, as a whole, but lie at an angle thereto to form wedge faces to cooperate with similarly formed faces 3<sup>a</sup> of the wooden wedge blocks or keys 3, whose side faces 3<sup>a</sup> lie parallel with and engage the web 1<sup>a</sup> of the rail, as clearly shown in Figs. 2 and 3 of the drawings. The chair webs 2<sup>b</sup> are braced from spreading by bracing webs 2<sup>c</sup>, as shown. The base 2<sup>a</sup> of the chair 2 has its chamber 2<sup>d</sup> conforming to the shape of and receiving the rail base 1<sup>d</sup> and a wooden bed plate 4 upon which the rail ends rest.

In practice, the rail ends are placed in the chair 2, as shown in Figs. 1 and 2, after which the wedge keys 3 are driven into place from opposite ends of the chair until a tight fit is had.

In order to prevent the wedge pins or keys from slipping out the inner faces of the webs 2<sup>b</sup> may be rifled, fluted, corrugated or raked, at suitable intervals, as shown in Figs. 2 and 3, and in addition thereto, the web 2<sup>b</sup> may be bored and tapped as at 2<sup>h</sup>—2<sup>k</sup> to receive set screws 6, one set of which (those in the hole 2<sup>h</sup>) exert a downward and inward force on the wedge keys 3, while the other set (those in hole 2<sup>k</sup>) exert their force at approximately right angles to the wedges 3, thereby positively preventing the wedges from working loose.

In order to prevent spreading of the rails at the joint the chairs 2 are recessed at 7<sup>a</sup>, into the ties 7 and to prevent longitudinal creeping of the chair 2 in the recess 7<sup>a</sup>, and also to relieve the wooden tie from lateral strains, due to the spreading tendency of the rails, when a train passes thereover, I provide a pair of spike grooves 2<sup>s</sup> on each side of the chair which are directed downwardly and outwardly diverging from one another downwardly, as shown in Figs. 3 and 4. It will be noticed the holes all diverge from one another downwardly, that is, the holes on one side diverge downwardly toward the ends of the chair and toward the outer side thereof. Spikes 5 are held in the holes or grooves 2<sup>s</sup> and are driven into the tie and thereby securely bracing the chair in its recess 7<sup>a</sup> from both lateral and longitudinal movement.

By making the wedge keys 3 and bed plate 4 of wood and the chair of cast or pressed or wrought metal, a strong joint is

produced which will be noiseless in operation as the contact of metal on metal is reduced to a minimum.

From the foregoing description taken in connection with the accompanying drawings, it is thought the complete construction, operation and advantages of the invention will be readily understood by those skilled in the art to which the invention appertains, and I desire to say that slight changes in the detail construction can be made without departing from the spirit of the invention or the scope of the appended claims.

What I claim is:

1. In a rail joint, a joint chair comprising a base having a rail base receiving chamber and upwardly extending parallel webs spaced apart, and having their inner faces parallelly disposed to one another and held in planes at an angle to the central vertical longitudinal axis of the chair and the web of the rail, rails having their ends held in said chair, wooden wedge keys interposed between the chair web and the rail web to secure the rail immovable, a wooden bed plate in the rail base receiving chamber under the rail ends, means for retaining said wedge keys in place, said means comprising protuberances on the inner faces of the rail chair webs to bite into the keys.

2. In a rail joint, a joint chair comprising a base having a rail base receiving chamber and upwardly extending parallel webs spaced apart, and having their inner faces parallelly disposed to one another and held in planes at an angle to the central vertical longitudinal axis of the chair and the web of the rail, rails having their ends held in said chair, wooden wedge keys interposed between the chair webs and the rail web to secure the rail immovable, a wooden bed plate in the rail base receiving chamber under the rail ends, means for retaining said wedge keys in place, said means comprising protuberances on the inner faces of the rail chair webs to bite into the keys, and set screws tapped into the chair webs to engage the keys.

3. In a rail joint, a joint chair comprising

a base having a rail base receiving chamber and upwardly extending parallel webs spaced apart, and having their inner faces parallelly disposed to one another and held in planes at an angle to the central vertical longitudinal axis of the chair and the web of the rail, rails having their ends held in said chair, wooden wedge keys interposed between the chair webs and the rail web to secure the rail immovable, a wooden bed plate in the rail base receiving chamber under the rail ends, means for retaining said wedge keys in place, said means comprising protuberances on the inner faces of the rail chair webs to bite into the keys, set screws tapped into the chair webs to engage the keys, said set screws being arranged in pairs, one pair being directed downwardly and inwardly against the keys and the other pair being directed at substantially right angles to the keys.

4. In a rail joint, a joint chair comprising a base having a rail base receiving chamber and upwardly extending parallel webs spaced apart, and having their inner faces parallelly disposed to one another and held in planes at an angle to the central vertical longitudinal axis of the chair and the web of the rail, rails having their ends held in said chair, wooden wedge keys interposed between the chair webs and the rail web to secure the rail immovable, a wooden bed plate in the rail base receiving chamber under the rail ends, means for retaining said wedge keys in place, a tie having a transverse recess to receive said chair, said chair having a pair of spike grooves at each side, downwardly diverging from one another, the grooves of one side diverging downwardly from those of the other side, and spikes held in said grooves and entering said ties to secure said chair thereto and brace it from lateral and longitudinal movement.

CHARLES MALITCH.

Witnesses:

A. E. DIETERICH,  
JOHN T. SCHROTT.