J. LAEUFER.

RAIL CHAIR.

APPLICATION FILED SEPT. 14, 1911.

1,018,247.

Patented Feb. 20, 1912.

Fig. 1.

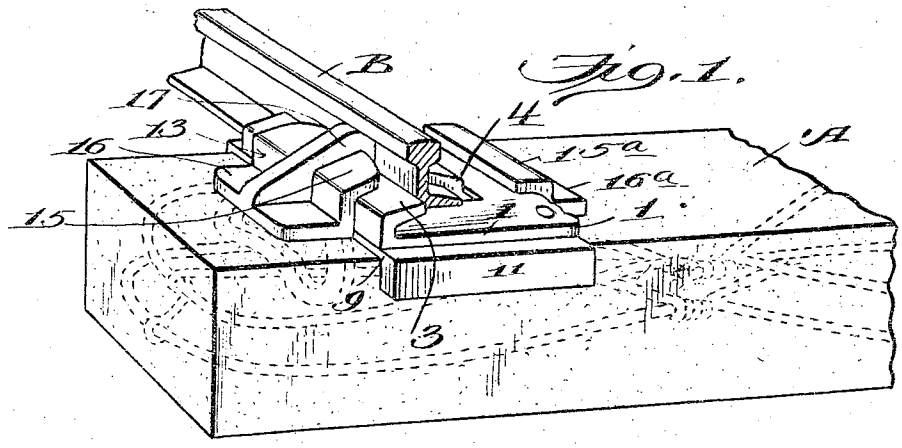


Fig. 2.

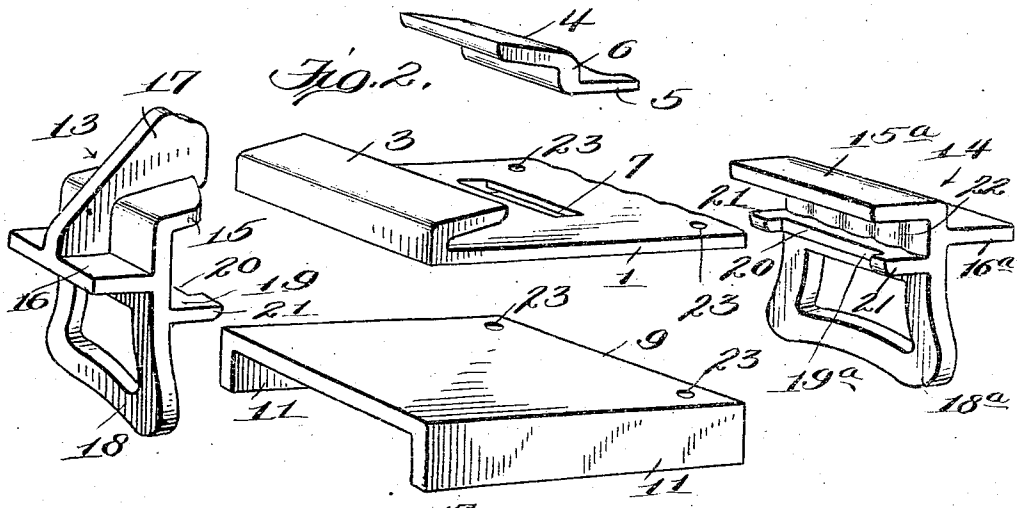
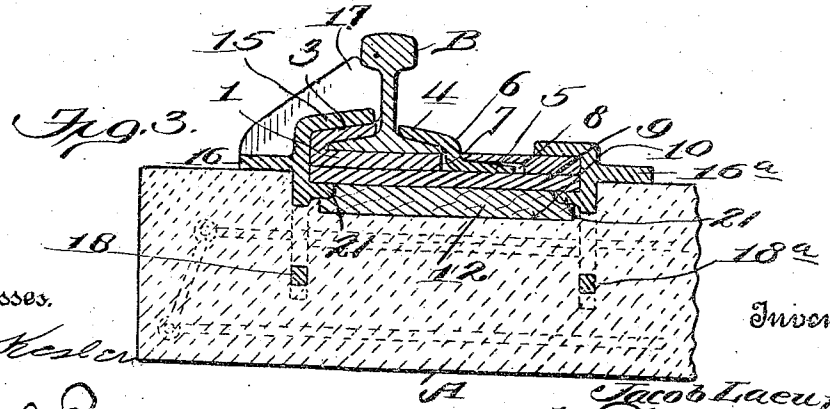


Fig. 3.



Witnesses.

John S. Powers.

Inventor.

Jacob Laeufer

by Amos L. Morris

Atty.

UNITED STATES PATENT OFFICE.

JACOB LAEUFER, OF LIMA, OHIO, ASSIGNOR TO HORACE K. HALLADAY, OF FINDLAY, OHIO.

RAIL-CHAIR.

1,018,247. Specification of Letters Patent. Patented Feb. 20, 1912.

Application filed September 14, 1911. Serial No. 649,289.

To all whom it may concern:

Be it known that I, JACOB LAEUFER, a citizen of the United States, residing at Lima, in the county of Allen and State of Ohio, have invented new and useful Improvements in Rail-Chairs, of which the following is a specification.

This invention relates to improvements in rail chairs and it proposes a construction which is more especially applicable to cement or composition ties but which may be employed with advantage in connection with wooden or metallic ties.

The rail chair which forms the subject of the present invention is of such nature that the parts thereof are maintained with the greatest security in their operative relations. yet without the employment of any special fastening adjuncts such as bolts, spikes, or wedges. The relation of the coöperating parts is, furthermore, of such nature that the assemblage or the removal of a rail may be very quickly and conveniently effected.

A further advantage of the improved construction and which is especially realized in connection with cement or composition ties is that efficient provision is made for protecting the tie against the effects of shocks and wear.

An embodiment of the invention is disclosed in the accompanying drawings, wherein:—

Figure 1 is a perspective view showing the improved rail chair as in use; Fig. 2 shows the parts of the chair separately and in perspective, the separate parts being grouped in the order of their assemblage; and Fig. 3 is a cross sectional view of the chair, showing the same applied to a tie.

Similar characters of reference designate corresponding parts throughout the several views.

The drawings show the chair in its application to a cement or composition tie A which is suitably reinforced.

The rail B rests directly upon a plate 1 and is held in position by an overhanging lip 3, which is integrally formed with said plate at one side thereof and by a second lip 4, said lips having clamping engagement with the flanges of the rail. The lip 4 is separably associated with the plate 1 and is provided with a flange 5 and with an offset 6, and the flange 5 is positioned in a recess 8 in the underface of the plate 1 and which extends outwardly from the slot 7. The flange 5 is of a tapering section as it projects outwardly from said lip, for a purpose which will hereafter appear. The plate 1 rests upon a saddle plate 9 which fits partly in a transverse recess 10 formed across the upper end of the tie and which has at its ends depending flanges 11 which lie against the side faces of the tie and thereby hold the plate 9 against endwise movement. The plate 9 in turn rests upon a cushion plate 12 which is preferably of wood, although a suitable composition may be used. The plate 12 is also positioned in the recess 10 and is of less width than the plate 9. The plates 1 and 9 are held against movement by clamp members 13 and 14. The member 13 includes a lip 15 which engages over the lip 3; a laterally projecting flange 16 which rests upon the surface of the tie; a rail bracing web 17 which is formed upon the flange 16 and the lip 15 and which extends under the tread of the rail and thereby assists in holding the latter against lateral displacement; a depending skeleton flange 18 which is embedded in the tie; and a ledge 19 which furnishes support for the plate 9. The member 14 includes a lip 15^a which engages over the plate 1; a laterally projecting flange 16^a which rests upon the surface of the tie; a depending skeleton flange 18^a which is embedded in the tie; and a ledge 19^a which is overhung by the lip 15^a and which also furnishes support for the plate 9. The ledges 19 and 19^a are recessed as at 20 and the side edge portions of the plate 12 are positioned in the recesses 20, the lug-like projections 21 at the ends of said recesses serving to hold the plate 12 against endwise movement.

It is of course manifest that the side edge portions of the plates 1 and 9 are confined between the lip 15 and the ledge 19 and between the lip 15^a and the ledge 19^a, and in this connection, it may be noted that the inner vertical face of the member 14 is slightly corrugated as at 22 and that the faces of the plates 9 and 1 which contact

with the face 22 are corrugated to match the corrugations of the latter. The plates 1 and 9 are thus positively held against endwise movement. The sides of the plates 1 and 9 are formed on a slight angle to one another in order that said plates may have the outline of a wedge, and the face 22 is arranged at a corresponding angle to the corresponding face of the member 13.

Owing to the form and arrangement of the lip 4 with its offset 6 and flange 5, the clamping pressure of said lip will vary in proportion to the load on the rail; that is to say, the greater the load on the rail the greater will be the engagement of the lip 4 upon the adjacent rail flange. This action results from the fact that the cushion plate 12 permits a slight downward yielding of the plate 1 consequent to a load on the rail, which yielding action will be greater throughout that portion of the plate 1 which is immediately under the rail; and the effect of this yielding action will be to rock the lip 4 about the upper angle of the offset as a center, thereby causing said lip to bear with increased pressure upon the adjacent rail flange. It will, of course, be understood that the flange 5 to which reference has been made, and the width of the slot 7, is selected to provide for the rocking movement of the lip 4 above explained.

In case the plate 1 should have any loose play, however slight or imperceptible, such loose play will be without effect in causing undue wear of the tie or of the cushion plate, as it will be spent upon the saddle plate 9 which, being rigid in its position, will thus protect the cushion plate. The office of the latter is to provide for such yielding movement of the chair as may be necessary to take up shocks and vibrations and to otherwise provide for a smooth running of the cars.

It will, of course, be apparent that the members 13 and 14 will efficiently prevent any lateral or endwise movements of the parts associated therewith, *i. e.*, of the plates 1, 9, and 12, not only by reason of the relation between said members and said associated parts, but as well by reason of the form of the members, which is such that they are most rigidly held and braced in and by the tie and by the parts which they lock.

While not strictly necessary, it may in some cases be desirable to positively connect the superposed plates, in which case the plates 1 and 9 are formed with suitably located alining openings 23 through which spikes or pins may be driven into the plate 12.

In case it should be necessary to remove a rail, this is effected by jacking the rail so as to take its weight from the plate 1 and at the same time to relieve the pressure of the lip 4. The plate 1 may thereupon be driven endwise from under the rail by a series of sharp blows imparted with any suitable instrument or agency.

Having fully described my invention I claim:

1. In a rail chair, a plate having a fixed flange engaging lip at one side thereof and having a longitudinal slot, a flange engaging lip confronting the first named lip and having an offset which is disposed in the slot and a flange which projects from the offset and is disposed under the plate, and a pair of clamp members adapted to be secured to a tie upon opposite sides of said plate to hold the latter against movement, one of said clamps having a lip which is adapted to engage and overlie the first-named lip, and the other clamp having a lip which is adapted to engage the adjacent side of the plate.

2. In a rail chair, a plate having a fixed flange engaging lip at one side thereof and having a longitudinal slot, a flange engaging lip confronting the first named lip and having an offset which is disposed in the slot and a flange which projects from the offset and is disposed under the plate, and a pair of clamp members adapted to be secured to a tie and to hold the plate against movement, each clamp member having a tie engaging flange, a supporting ledge, and a lip overhanging the ledge.

3. In a rail chair, a plate having a fixed flange engaging lip at one side thereof and having a longitudinal slot, a flange engaging lip confronting the first named lip and having an offset which is disposed in the slot and a flange which projects from the offset and is disposed under the plate, and a pair of clamp members adapted to be secured to a tie and to hold the plate against movement, the plate having a wedge shape and having a corrugated side face and one of the clamp members having its face corrugated to match the corrugated face of the plate.

4. In a rail chair, a plate having a fixed flange engaging lip at one side thereof and having a longitudinal slot, a flange engaging lip confronting the first named lip and having an offset which is disposed in the slot and a flange which projects from the offset and is disposed under the plate, a pair of clamp members adapted to be secured to a tie and to hold the plate against movement, and a second plate which rests directly upon the ledges of the clamp members and upon which the first plate rests, the second plate having end flanges which overlie the sides of the tie.

5. In a rail chair, a plate having a fixed flange engaging lip at one side thereof and having a longitudinal slot, a flange engaging lip confronting the first named lip and having an offset which is disposed in the

slot and a flange which projects from the offset and is disposed under the plate, a pair of clamp members adapted to be secured to a tie and to hold the plate against movement, a second plate which rests directly upon the ledges of the clamp members and upon which the first plate rests, the second plate having end flanges which overlie the sides of the tie, and a cushion plate arranged under the second plate.

6. In a rail chair, a plate having a fixed flange engaging lip at one side thereof and having a longitudinal slot, a flange engaging lip confronting the first named lip and having an offset which is disposed in the slot and a flange which projects from the offset and is disposed under the plate, a pair of clamp members adapted to be secured to a tie and to hold the plate against movement, a second plate which rests directly upon the ledges of the clamp members and upon which the first plate rests, the second plate having end flanges which overlie the sides of the tie, and a cushion plate arranged under the second plate, the ledges having recesses in which the side edge portions of the cushion plate fit.

7. In a rail chair, a plate having a fixed flange engaging lip at one side thereof and having a longitudinal slot, a flange engaging lip confronting the first named lip and having an offset which is disposed in the slot and a flange which projects from the offset and is disposed under the plate, a pair of clamp members adapted to be secured to a tie and to hold the plate against movement, and supporting means for said plate, the supporting means including a cushioning element.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JACOB LAEUFER.

Witnesses:
MERLE N. POE,
LEWIS D. FIRMIN.