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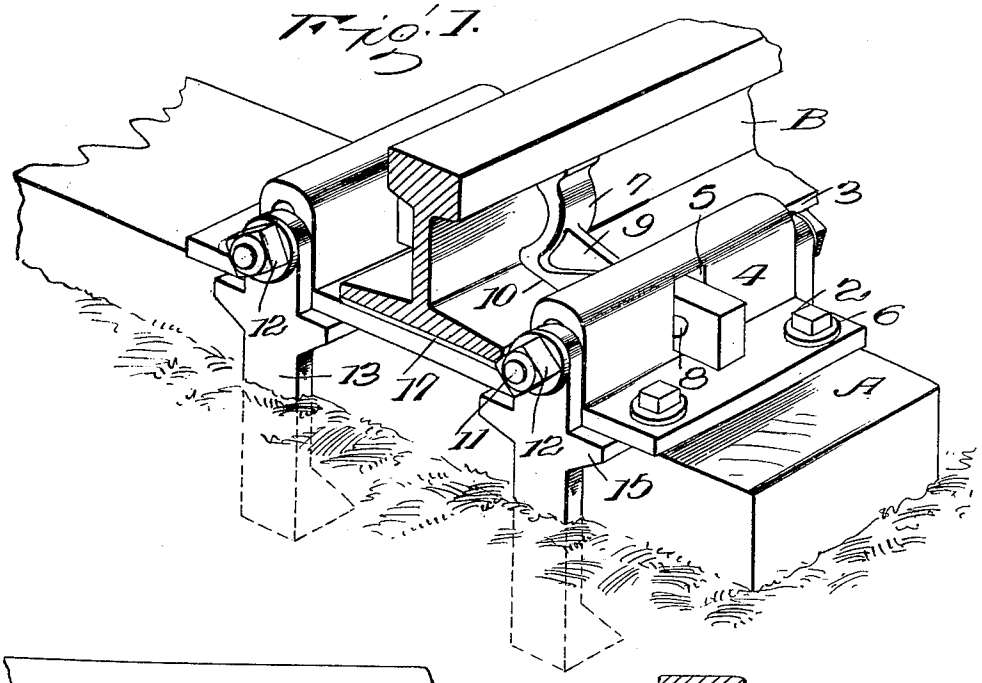
TIE ANCHORING RAIL CHAIR.

APPLICATION FILED AUG. 27, 1913.

1,126,526.

Patented Jan. 26, 1915.

Fig. 1.



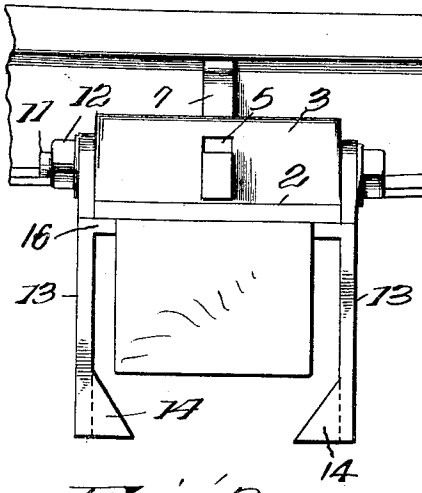


Fig. 2.

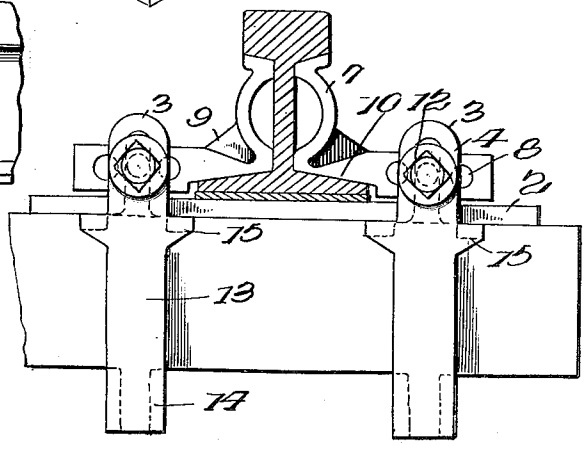


Fig. 3.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

AUGUST G. LIEBMANN, OF BUTTE, MONTANA, ASSIGNOR TO VIGNOLES RAIL CHAIR COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

TIE-ANCHORING RAIL-CHAIR.

1,126,526. Specification of Letters Patent. Patented Jan. 26, 1915.

Application filed August 27, 1913. Serial No. 787,005.

To all whom it may concern:

Be it known that I, AUGUST G. LIEBMANN, citizen of the United States, residing at Butte, in the county of Silverbow and State of Montana, have invented certain new and useful Improvements in Tie-Anchoring Rail-Chairs, of which the following is a specification.

This invention relates to railway track appliance and particularly to rail chairs.

The primary object of the present invention is to provide a rail chair particularly adapted to be used at curves though not necessarily limited to this use, said chair being provided with means whereby the ties may be anchored securely in the ballast to thereby prevent lateral creeping of the ties.

A further object of the invention is to provide a tie-anchoring rail chair so designed that when the ties do eventually creep out of line after some years of service, the anchors may be readily detached and the track realined and the anchors readjusted independently of the rail holding means, that is to say, without disturbance of gage of the rail in its fixed relation to the track structure.

A further object of the invention is to provide means for holding a rail securely upon a tie, means for preventing wear of the tie, and means for permitting lateral adjustment of the rail with relation to the tie.

A further object of the invention is to provide an improved rail chair having means for holding a rail securely upon the chair in any desired adjusted position, and tie-anchoring means detachably secured to the chair and adapted to engage ballast below the chair.

Other objects will appear in the course of the following description.

The invention is illustrated in the accompanying drawings wherein:

Figure 1 is a perspective view of a portion of a tie, a rail thereon and the improved rail chair and tie-anchoring device. Fig. 2 is an end elevation of the form illustrated in Fig. 1. Fig. 3 is a side elevation thereof, the rail being in cross section.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

Referring to these figures, A designates a tie of any ordinary construction and B a rail of standard form. Disposed upon the tie is a bed plate 2. This bed plate is preferably of rolled plate and is formed adjacent its ends with transversely extending corrugations 3 constituting abutments, the walls of said corrugations being spaced from each other and extended upwardly. The side walls 4 of the corrugations are slotted at 5, the slots extending vertically. The corners of the bed plate are formed with perforations for the passage of the screw spikes 6 of any ordinary or suitable form which spikes act to hold the bed plate upon the upper face of the tie.

Disposed on each side of the rail is a rail brace 7 which is angular in form. One leg of each rail brace extends vertically and bears at its upper end beneath the head of the rail and at its lower end against the base flange of the rail. The horizontal leg of each rail brace extends through the slot 5 in the corresponding corrugation 3 and is provided with a plurality of openings 8. A bracing web 9 is disposed at the intersection of the vertical leg with the horizontal leg of each brace. The under side of each rail brace is cut away at 10 so that the under face of the rail brace will fit over and have the contour of the upper face of the rail base. For the purpose of holding the rail braces in laterally adjusted position, I provide bolts 11 which pass longitudinally through the corrugations 3, each bolt being formed at one end with a head and at the other end with screw threads for engagement with a nut 12.

The anchors whereby the tie is held from shifting in the ballast are disposed one at each end of each corrugation 3. Each anchor comprises a vertically disposed body 13,

the upper end of which is perforated for the passage of the adjacent bolt 11. The lower end of each body is formed with downwardly and inwardly extending spaced flanges 14, the upper edges of which are upwardly inclined as shown clearly in Fig. 2. The body of each anchor is formed with laterally projecting lugs 15, each of which has an inwardly projecting flange 16 extending beneath the bed plate, the bed plate being wider than the tie so as to project beyond the tie and rest upon the brackets formed by the flanges 16 and lugs 15. The flanges 16 not only form brackets bearing against the under face of the bed plate, but also form spacing members for engagement with the side faces of the tie and serve to space the anchoring members outward from the tie. As will be seen from Fig. 2 the anchoring members are of such depth that the flanges 14 are disposed beneath the tie.

In practical use the rail B is supported upon the bed plate 2 intermediate the corrugations or abutments 3. The rail braces are then disposed one on each side of the rail with their horizontal legs extending through the slots 5. The anchoring members 13 are disposed at each end of each corrugation and the bolts 11 are passed through the upper end of each anchoring member, through the adjacent corrugation 3 and through one of the perforations 8. Washers are of course interposed between the nuts 12 and the end of each corrugation 3.

If it is desired to adjust the rail laterally upon the bed plate, the bolts 11 are removed, the rail shifted and the bolts reinserted through the appropriate perforations 8, after which the nuts 12 are again tightened up. With the parts in the position shown in Fig. 1, it will be seen that the anchoring members will extend downwardly on each side of the tie and beneath the tie and that they will engage in the ballast disposed between the ties. Inasmuch as these anchoring members are clamped to the tie by means of the bolts 11, and are held from any rotation or movement except with the tie, and project down into the ballast, it is obvious that the tie can not be readily shifted in the ballast. These anchors prevent lateral creeping of the ties to a certain extent, and if the ties should eventually creep out of line after some years service, it is obvious that the anchors may be readily detached, the ties and rail shifted, the track relined and the anchors readjusted independent of the rail holding means, that is to say, without disturbance of gage of the rail in its fixed relation to the track structure.

At the present time where anchors are used to keep the track in line, said anchors are not detachable from the tie and hence when the track gets out of line it is impossible to reline it. It is also plain that with the present invention it is possible to shift the rail within the chair without readjusting the anchors and without releasing the primary fastenings 6. It is also obvious that by means of shims the rail may be raised any desired extent. One of these shims is illustrated beneath the rail and is designated 17.

The improved rail chair may be economically made, is very simple in construction, permits of the easy readjustment of the anchors and independent adjustment of the rail and is entirely effective in practice to hold the ties from creeping.

It may be pointed out incidentally that this rail chair conforms to the requirements of the final report of the Block Signal and Train Control Board of the Interstate Commerce Commission in that provision is made for holding the rail from lateral or vertical thrust and against tipping thrust, and that provision is made for shimming the rail.

While the device is shown applied to a wooden tie it will be obvious that it may be applied to other forms of ties, particularly in view of the fact that the primary fastenings holding the bed plate to the tie do not need to be loosened in order to secure a proper adjustment of the rail to gage. Where wooden ties are used, every adjustment of the rail requires respiking. This shortens the lift of the tie to such an extent that it is not economically possible to use treated ties. By using my improved rail chair, the life of the tie is so greatly increased that treated ties may be used.

What I claim is:

1. A rail chair comprising a bed plate having upstanding transversely extending hollow abutments, each abutment being vertically slotted transverse to the length of the abutment, rail braces having portions thereof extending through the slots in the abutments, and fastening devices passing longitudinally through the hollow abutments and each through a perforation in the corresponding rail brace.

2. A rail chair adapted to rest upon a tie, rail-engaging members engaged with said rail chair, and tie-anchoring devices disposed on each side of the chair and extending below and beneath the tie.

3. A rail chair adapted to rest upon a tie, rail-engaging members mounted upon said rail chair, and tie-anchoring devices disposed on each side of the rail chair detachably secured thereto and depending therefrom and extending beneath the tie.

4. A rail chair adapted to rest upon a tie, rail braces engaged with said rail chair, and tie-anchoring devices depending from the rail chair and detachably secured thereto, each anchoring device comprising a

downwardly extending member formed with an angularly projecting flange at its lower end and having means engaging the other end to prevent lateral movement of the anchoring device.

5. A rail chair adapted to rest upon a tie, rail braces engaged with said rail chair, and tie-anchoring devices depending from the rail chair and detachably secured thereto, each anchoring device comprising a downwardly extending member having an angularly projecting flange at its lower end and provided intermediate its ends with an inwardly projecting bracket extending beneath and engaged with the chair.

6. The combination with a rail chair having upstanding abutments, of tie-anchoring devices disposed at each end of each abutment, each tie-anchoring device having a portion thereof extending beneath the rail chair and braced thereagainst, and a bolt passing through each abutment and through the corresponding anchoring devices.

7. The combination with a tie and a rail, of a rail chair thereon comprising a plate having upstanding abutments at its opposite ends, and tie-anchoring devices disposed at each end of each abutment, each tie-anchoring device comprising a depending member perforated at its upper end, an intermediate portion of said member having inwardly projecting lugs extending beneath the chair and bearing against the side face of the tie to space the member therefrom, and bolts passing through the abutments and through the perforations of the anchoring devices.

8. A rail chair of the character described comprising a bed plate adapted to rest upon a tie, the bed plate being formed with transverse corrugations adjacent its opposite ends, said corrugations forming hollow abutments, each of said corrugations being vertically slotted, angular rail braces each having a horizontal leg projecting through the slot in the corresponding abutment and provided with a plurality of perforations, tie-anchoring members disposed one at each end of each abutment and each comprising a depending member having an angularly disposed flange, and having lugs projecting inward and adapted to bear against the face of a tie and bearing against the under face of said bed plate, and bolts passing one through each abutment and through a perforation in the adjacent rail brace and through the upper ends of the corresponding anchoring devices.

9. The combination with a tie, of a rail supporting member mounted thereon, and detachable ballast engaging devices supported one on each side of the rail supporting member and extending downwardly on the outer side faces of the tie.

10. The combination with a tie, of detachable ballast engaging anchoring devices mounted thereon, each of said devices extending down below the tie having a laterally projecting flange and being formed with spacing members engaging the tie and spacing the device from the tie.

11. A rail chair including a bed plate having a seat, adjustable rail securing members adapted to coöperate with a rail for securing the rail in different positions of vertical and lateral adjustment with respect to the seat, and tie anchors coöperating with the chair and removable to permit realinement of rail without disturbing the gage of the track or the bed plate.

12. A rail chair including a bed plate having a seat, adjustable rail braces adapted to coöperate with a rail for holding said rail in different positions of vertical and lateral adjustment with respect to the bed plate, means for holding the rail braces in laterally and vertically shifted positions, and tie anchors coöperating with the chair and removable to permit realinement of the rail without disturbing the bed plate.

13. A rail chair including a bed plate, means mounted on the bed plate for holding a rail in different positions of lateral and vertical adjustment with respect thereto, and removable tie anchoring devices coöperating with the chair, whereby the ties may be realined in track without disturbance of adjustment of rails in their relation to gage.

14. A rail chair including a bed plate having upstanding abutments, adjustable rail braces, locking mechanism coöperating with the rail braces and abutments for holding a rail in different positions of lateral and vertical adjustment with respect to the bed plate, and removable tie anchoring devices depending from the abutments and held in position thereon by the locking mechanism.

15. A rail chair including a bed plate having upstanding abutments spaced apart a distance greater than the width of a rail base to permit a rail to be adjusted both laterally and vertically with respect to the bed plate, rail braces coöperating with the rail and abutments, tie anchoring devices depending from the abutments, and fastening devices extending through the abutments and engaging the tie anchoring devices and braces.

16. The combination with a tie and a rail, of a chair having a bed plate of greater width than the tie and provided with upstanding abutments, rail braces co-acting with the rail and abutments for holding the rail in different positions of lateral and vertical adjustment with respect to the bed plate, tie anchoring devices depending from the abutments and provided with flanges supporting the projecting edges of

the bed plate, and fastening devices extending through the anchoring devices and abutments and engaging the rail braces.

17. A rail chair including a bed plate, means for securing a rail on the bed plate or on a shim in different positions of lateral and vertical adjustment with respect to the bed plate, and anchoring members depending from the chair and detachably secured thereto, whereby they may be removed to permit realinement of the rail without disturbing gage of track or said bed plate.

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

AUGUST G. LIEBMANN. [L. S.]

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."