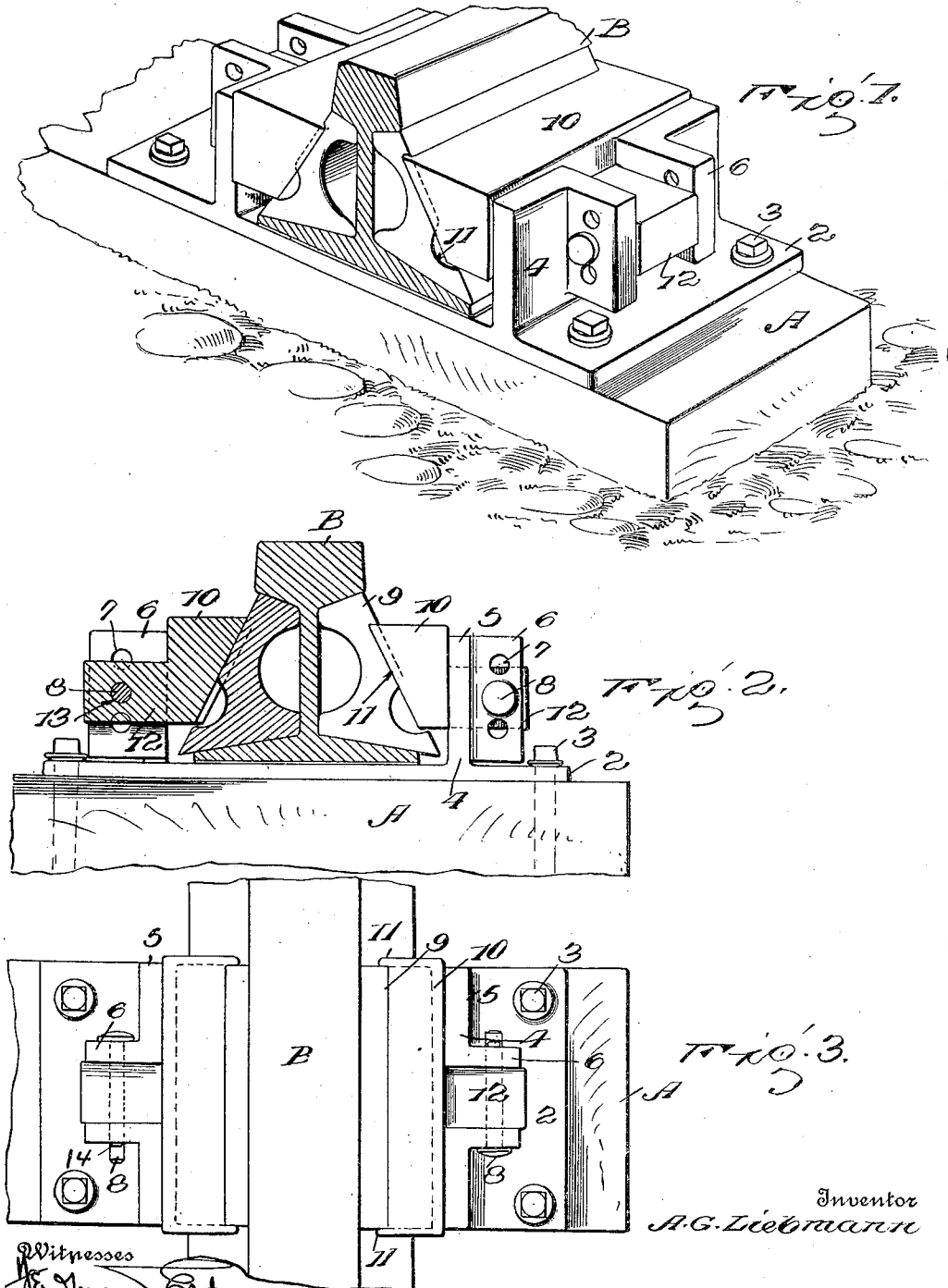


A. G. LIEBMANN.
RAIL CHAIR.
APPLICATION FILED JULY 8, 1913.

1,126,513.

Patented Jan. 26, 1915.



Witnesses
Edmund Speer
J. H. Hume

By: *H. A. S. S. S.* Attorneys

Inventor
A. G. Liebmann

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.

RAIL-CHAIR.

1,126,513.

Specification of Letters Patent.

Patented Jan. 26, 1915.

Application filed July 3, 1913. Serial No. 777,953.

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 Rail-Chairs, of which the following is a specification.

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

The object of the invention is to provide a rail chair of simple construction which is adapted to solidly hold the rail upon the tie, which will resist lateral vertical and tipping thrusts and which will permit the rail to be laterally adjusted for gage and vertically adjusted for surface without disturbance of the primary fastenings whereby the chair is held upon the tie and in which the adjustments of the rail may be readily secured.

A further object of the invention is to provide a rail chair which is peculiarly adapted for mountainous sections of the United States, where snow fall is encountered during the greater portion of the year and the adjustable range of the chair is necessary for the maintenance of rails in alinement and surface. In these sections the railways are put to their heaviest work as the track is necessarily excessive grades and curvatures. Further, a railway passing through a mountainous country in order to handle traffic profitably must use the largest locomotives available, and in order to handle this traffic with safety and permit relative speed of trains a high standard of track construction is imperative. Many roads have either earth ballast, very light rock ballast, or solid rock ballast and hence a chair adapted for these roads must hold the rail solidly to the tie and yet permit ready adjustment of the rail without shifting of the tie to accomplish such necessary adjustments.

The improved chair is so constructed as to allow maximum shimming and maximum lateral adjustment. The locking means is simple and disposed on the outer side of the chair, and may be readily changed to permit adjustments even though the chair be coated with snow, ice and frost.

The invention is illustrated in the accompanying drawings, wherein:—Figure 1 is a perspective view of a portion of a tie and a rail supported thereon with one of my improved chairs attached to the tie. Fig. 2 is an end elevation of the tie, one side of the

chair and the rail being shown in section. Fig. 3 is a plan view of the construction shown in Fig. 2.

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 the tie and B a rail.

The improved chair comprises a bed-plate 2 which rests flat upon the face of the tie and is of a width equal to the width of the tie. The bed-plate is held to the tie preferably by screw-spikes indicated at 3.

The bed-plate is formed at each end with upwardly projecting angular abutments 4. There are a pair of these abutments at each end of the bed-plate and each abutment consists of a web 5 extending parallel to the rail B and an integral web 6 extending transversely of the rail B. These webs may be integral buttressing portions, if the bed-plate is in the form of a casting, or pressed outwardly, if of a rolled shape. The webs 5 of one pair of abutments are spaced from the webs 5 of the opposite pair of abutments a distance greater than the width of the rail-base, as illustrated clearly in Fig. 1. The web 6 of each pair of abutments is formed with a vertical series of perforations 7 for the passage of a bolt, pin or other fastening device, designated 8.

Disposed against the rail on each side thereof are the downwardly and outwardly inclined rail-braces 9. These braces at their lower ends have enlarged basal portions which fit against the base-flange of the rail and which is of a width equal to or slightly greater than the width of the base-flange. The outer face of each rail-brace is downwardly and outwardly inclined.

Disposed between each pair of abutments and the corresponding rail-brace 9 is a wedge 10. Each wedge has a vertical outer face which bears against the vertical inner faces of the webs 5 of the adjacent pair of abutments and has a downwardly and outwardly inclined inner face bearing against the outer face of the corresponding rail-brace 9. The wedges are slightly longer than the rail-braces 9 and are formed with lips 11 which embrace the ends of the rail-braces so as to prevent any lateral shifting of said rail-braces. Each of the wedges 10 is formed with an outwardly projecting extension 12

having a width approximately equal to the distance between the webs 6 of the abutments so that the extension 12 may have vertical and inward movement between said webs 6. Each of these extensions 12 is perforated as at 13 for the passage of the pin or bolt 8.

The operation of this form of my invention will be apparent from what has gone before.

It will be seen that when the rail is in its median position the wedging members 10 will be disposed at the same height and will be locked in position by the pins 8 and that these wedging members, bearing as they do over a large area of the rail-braces 9 will support these rail-braces solidly against any lateral stress. If it is desired to insert shims beneath the rail-braces, the pins 8 are removed and the rail elevated thus permitting said shims to be inserted. After the shims are in place the wedging members 10 are disposed on each side of the rail-braces and the pins 8 reinserted in the proper perforations 7 and driven home. As there are a plurality of these perforations in the webs 6, a maximum shimming may be used to elevate the rail. If it is desired to laterally shift the rail one of the wedges 10 is moved upwardly and the other downwardly, thus acting to hold the rail in a shifted position in the same manner as heretofore described. The rail-braces 9 cannot be shifted longitudinally because of the lips 11 on the wedges 10, which latter interlock with the abutments.

It will be particularly noted that the base-flange of my improved chair is formed of a common structural element, viz., a deformed I-beam, and therefore may be very readily rolled. It will likewise be seen that all the parts have interlocking engagement with each other so that no part can move accidentally. If the road-bed should be heaved upward through the action of frost or thaw, the base-flange of the rail will not shear, as is the case where spikes are used, but the pin 8 would give before the strain became so excessive as to shear the base-flange. The pins 8 may be held locked in any desired manner, but I have shown for this purpose each pin as being perforated for the passage of a cotter pin 14.

While the chair heretofore described is particularly adapted for use on mountain roads it is obvious that it may be used on other roads without departing from the spirit of the invention.

As before stated, this particular form of chair is designed for mountain railways. On mountain railways, earth ballast is very generally used, and where used, the track requires shimming in excess of where rock ballast is used. At times, a maximum of two inches of shimming is necessary. Where

spikes are used, and the road is shimmed to an excess, the holding power of the spikes is greatly decreased with the result that rolling stock cannot travel in excess of four miles an hour, which means a great delay in trains. The construction heretofore described permits a maximum shimming which is an essential requirement on these roads. The base is formed from an ordinary structural shape, namely a beam analogous to an I-beam, one flange of the I-beam shape being bent up into alinement with the body portion of the shape, while the other flange at the same end is cut and turned inward to form the ears or webs 6.

What I claim is:—

1. A rail chair comprising a base-plate having a pair of upstanding abutments disposed at each end thereof, each pair of abutments having a vertical series of perforations, rail-braces having outwardly and downwardly inclined faces, and wedging members engaging said rail-braces and said abutments, each wedging member having a lateral extension adapted to engage between the corresponding pair of abutments and being transversely perforated, and fastening devices passing through the perforations of the abutments and through the extensions of the wedging members.

2. A rail-chair comprising a base-plate having at each end a pair of spaced abutments, each abutment consisting of upstanding webs disposed at an angle to each other, one of the webs of each abutment being formed with a vertical series of perforations, rail-braces disposed between the pairs of abutments and having downwardly and outwardly inclined faces, wedging members disposed between the abutments and the rail-braces, each wedging member having a lateral extension adapted to fit between the corresponding pair of abutments, said extensions being transversely perforated, and pins passing through the abutments and through the perforations of the extensions of said wedging members.

3. A rail-chair comprising a base-plate formed at each end with spaced abutments, each abutment consisting of upstanding webs disposed at an angle to each other, rail braces disposed between the abutments, wedging members disposed between the rail-braces and the abutments and having extensions projecting between the webs of the adjacent abutments, and means engaging said extensions with the webs.

4. A rail-chair comprising a base-plate having at each end a pair of upstanding abutments, the inner faces of which are flat and unobstructed throughout the entire height thereof, rail braces disposed between the abutments and adapted to engage the head and base flange of a rail, vertically movable wedging members disposed be-

tween the abutments and the rail-braces and having their outer faces bearing flat against the inner faces of the abutments, means for preventing longitudinal movement of the
5 wedging members, means for locking the wedging members in a vertically adjusted position, and means upon the wedging members engaging the rail-braces to prevent longitudinal movement of the rail-braces with
10 relation to the wedging members.

5. A rail chair including a base plate having a pair of upstanding abutments, each abutment consisting of vertical webs disposed at an angle to each other, a rail
15 brace, a vertically movable wedging member interposed between the rail brace and abutments and provided with an extension fitting between said abutments, and means passing through the abutments and engaging
20 the extension of the wedging member for holding said wedging member in different positions of adjustment.

6. The combination with a tie, of a bed-plate resting on the tie and provided at each
25 end with a pair of upstanding abutments

spaced apart a distance greater than the width of the base of a rail to permit said rail to be adjusted laterally and vertically with respect to the bed-plate, each abutment consisting of vertical webs, one of which is
30 disposed substantially parallel to the rail, and the other of which is disposed at substantially right angles thereto, braces bearing against the rail, and vertically movable
35 wedging members interposed between the braces and abutments and having their inner faces formed with lips engaging the rail braces and their outer faces provided with lateral extensions fitting between the
40 adjacent webs of the abutments, and means extending through the abutments and extensions of the wedging members for holding said wedging members in different positions of adjustment.

In testimony whereof I affix my signature 45
in presence of two witnesses.

AUGUST G. LIEBMANN. [L. S.]

Witnesses:

WM. NUSS,

W. H. MALONEY.

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