May 30, 1933. T. AURELIUS 1,911,231

ADJUSTABLE CLIP FOR RAILS

Filed Aug. 31, 1931

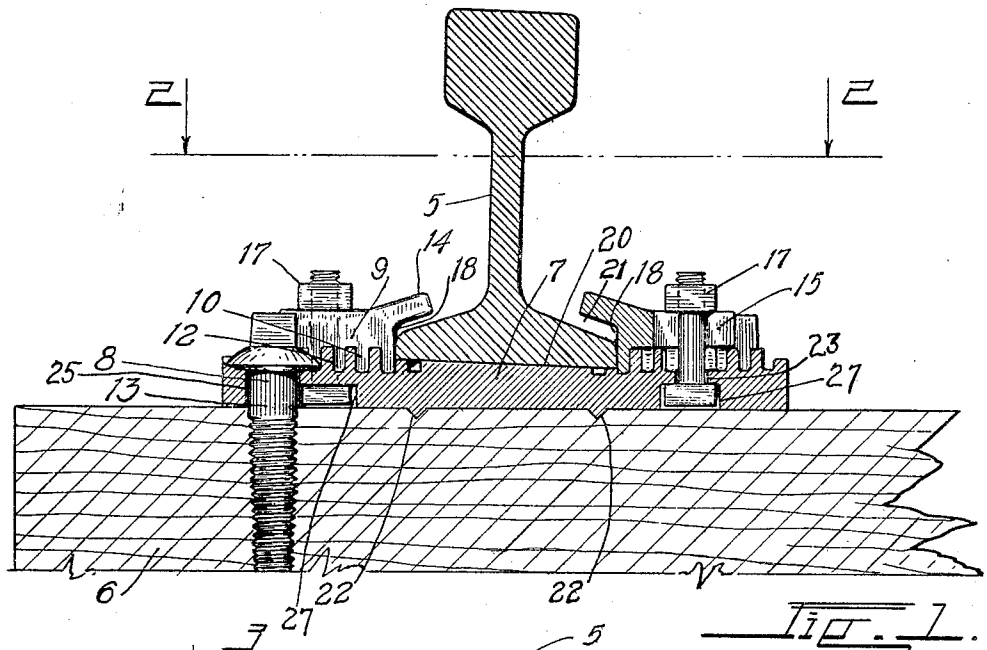


Fig. 1.

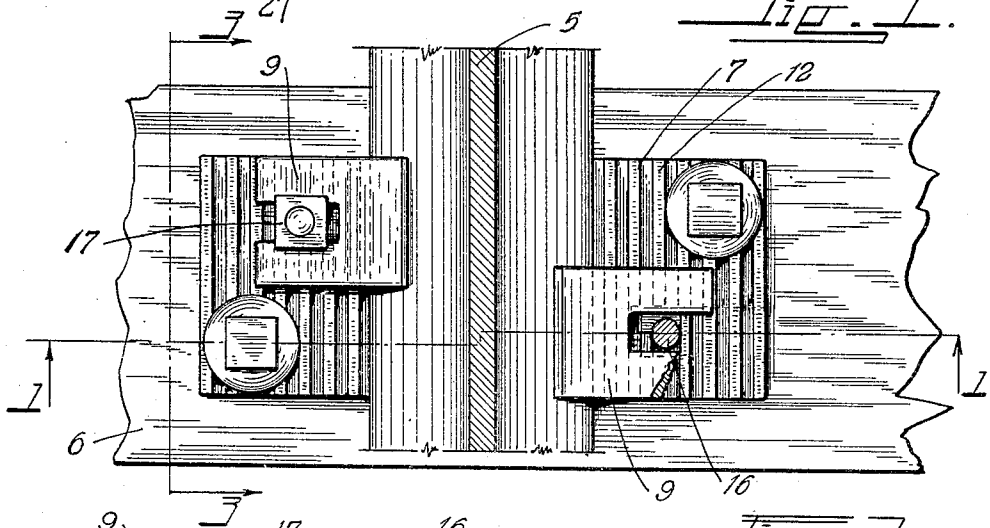


Fig. 2.

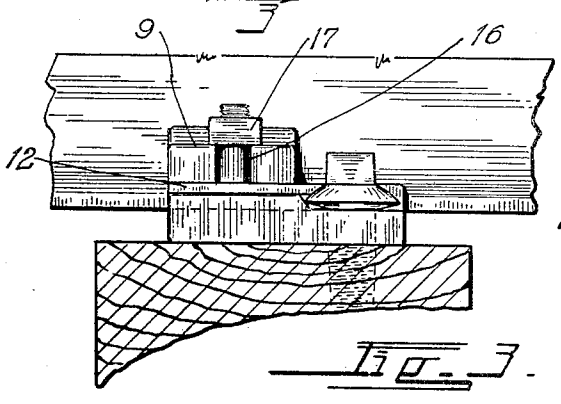


Fig. 3.

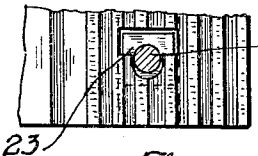


Fig. 4.

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UNITED STATES PATENT OFFICE

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ADJUSTABLE CLIP FOR RAILS

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My invention relates to the construction of railway tracks, and has for its main object to provide simple rail-holding means adapted to prevent detrimental displacement of the rails with relation to each other or their supporting-structure.

An object of the invention is to provide an improved tie plate upon which a rail is held in a novel manner so as to secure the maximum strength and holding power.

Other objects are to provide improved means for locking a tie plate to a tie so as to prevent shifting of the tie plate upon the tie, which causes the tie to wear, and to provide means whereby the tie plate readily becomes embedded in the tie.

Another object is to provide means for holding a rail in position on the tie plate, but permitting the rail to run longitudinally as well as move vertically.

In the present railroad construction, it is not customary to allow for a limited vertical movement of the rails and the tie plates to compensate for the wave motion of the rails ahead of the wheels. By reason of this wave motion, fastening devices for the rails, such as the spikes and tie plates, work loose and require frequent adjustment. Attempts to construct a railway without an allowance for vertical play of the rail results in a churning movement of the ties in the ballast of the road bed and a churning movement of the tie plate on the tie, and a general displacement of the constituent elements of the railway.

In the present invention, the vertical movement of the rails is relative to holding means, which, through the medium of permanently fixed tie plates, holds the rails upon the ties.

The holding means has as a constituent part, means for lateral adjustment of the rails, whereby to maintain them in proper alinement and at the proper gauge.

In the accompanying drawing,

Figure 1 represents an elevation in vertical cross section showing my improved construction, taken on the line 1—1 of Figure 2,

Figure 2, a horizontal section along the line 2—2 of Figure 1,

Figure 3, a fragmentary cross section on the line 3—3 of Figure 2, and

Figure 4, a broken plan of a part of the tie plate comprised in my invention.

Rails 5 are as usual supported on ties 6 through the intermediary of tie plates 7, which have ribs 22 running lengthwise of the track, to prevent lateral displacement of the tie plate.

The tie plates lie flat upon the ties with the ribs embedded in the tie, and are immovably fastened to the ties by means of square headed, screw spikes 8. The top of the tie plate is inclined, as shown at 20, which causes the rails 5 to be out of the vertical. In actual construction, the rails converge toward each other, whereby to conform to the bevel on the tread of wheels passing along the track. The rails are held upon the tie plates through the intermediary of clips 9 formed at their undersides with series of tenons 10 that fit into correspondingly formed grooves 12 in the upper side of the tie plate. The hereinbefore mentioned screw spike 8 has a shank 13 that fits in a hole 25 in the tie plate.

Adjustably fastened upon the tie plate at opposite sides of the rail are the beforementioned clips 9 provided with lips 14 formed integrally with the clips and overhanging the flanges or base portions of the rails in slightly spaced relation thereto, as shown at 21, to permit wave motion of the rail. The tie plates have irregularly shaped, punched openings 23, provided transverse of rolled grooves 27 running longitudinal of the plates on the under side. In assembling, bolts 16 are moved side ways through the openings 23 from the top of the plate and when the heads of the bolts 16 engage the grooves 27, the bolts are moved to an upright position, as seen in Figure 1. Each clip has a slot 15 for the passage of one of the bolts 16, by which the tie plate and clip are fastened together.

The outer ends of the bolts 16 are screw-threaded for the application of nuts 17 that bear upon the upper sides of the clips.

It will be noted that the rails are thus supported on the ties by means of immovable

tie plates and without the use of the ordinary spikes.

The rails fit between shoulders 18 of the clips and when it is desired that the rails be laterally adjusted to bring them in alinement or to the proper gauge, it is but necessary to loosen the bolts 16, lift the clips, and move same longitudinally, whereby different tenons of the clips and grooves of the tie plate are placed in engagement.

The adjustability of the clips also permits the tie plates to be used with rails of different sizes. Moreover, the high cost of material due to frequent replacements of the tie plates and/or spikes necessary in ordinary railroad construction is entirely eliminated. Moreover, in case the size of rail is changed, it is not necessary with the present invention to employ a new tie plate. Avoiding replacement of the tie plate prevents "spike killing" of the ties.

The ties and the road bed remain practically permanent in their relative positions, which avoids variation in the gauge of the railway, as on curves. In addition any misalignment is readily restored by simple adjustment of the clips on the stationary tie plates and without adjustment of either the tie plates or the spikes, as is necessary in the construction of railways now in use.

What I claim and desire to secure by Letters Patent is:

1. In railway construction, a tie, a tie plate immovably fixed thereon, a rail supported by the tie plate, clips laterally adjustable on the tie plate, and providing abutments for the rail at opposite sides of its base, the plate having irregular shaped openings and the clips having slots registering with the openings and bolts in the openings and slots, fastening the clips to the tie plates.

2. In railway construction, a tie, a tie plate immovably fixed thereon, a rail supported on the tie plate, the plate having grooves parallel with the rail and at opposite sides thereof, clips movable lengthwise of the tie at least from one groove to the next, and having means to engage the grooves in such selected positions, the clips providing abutments for the rail at opposite sides of its base and overhanging the base in spaced relation thereto, and means to hold the clips in any of their selected positions.

3. In railway construction, a tie, a tie plate immovably fixed thereon, a rail supported on the tie plate, the plate having grooves parallel with the rail and at opposite sides thereof, clips having slots lengthwise of the tie and having means to engage selected ones of the grooves, the slots being sufficiently long to move the clips longitudinally of the tie from one groove to the next, the clips providing abutments for the rail at opposite sides of its base, and means in the slots to hold the clips in any of their selected positions.

In testimony whereof I hereunto affix my signature.

THOMAS AURELIUS.