Dec. 24, 1929. L. M. ADAMS 1,741,005

RAIL SUPPORT

Filed Oct. 15, 1928

Fig. 1.

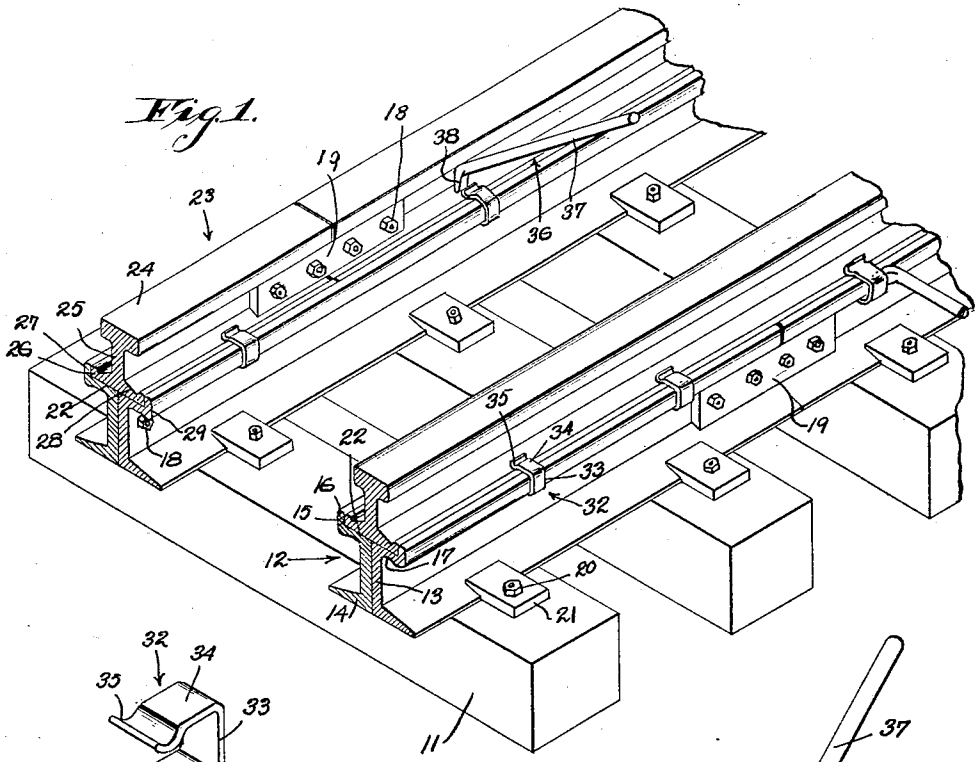

Fig. 3.

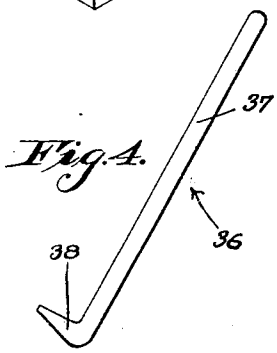

Fig. 4.

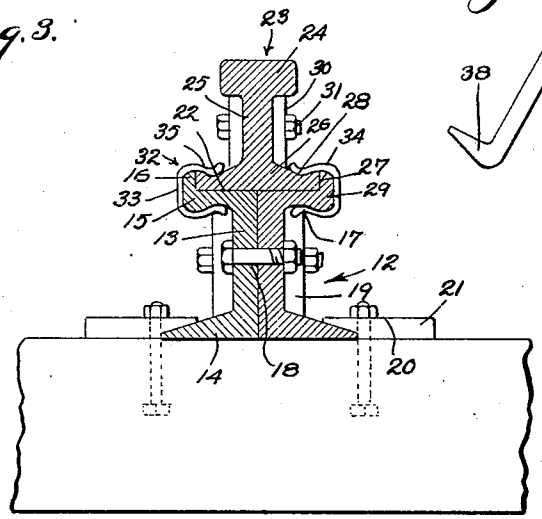

Fig. 2.

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UNITED STATES PATENT OFFICE

LOUIS M. ADAMS, OF LOS ANGELES, CALIFORNIA

RAIL SUPPORT

Application filed October 15, 1928. Serial No. 312,603.

My invention is a rail support and rail construction suitable for steam railway or electric railway tracks.

My invention pertains to the construction of a railroad track of such a character that concrete ties may be utilized and will withstand the hard usage of railroad service. To effect this I utilize channels placed back to back extending longitudinally of the track, such channels being secured to the ties. On the upper flanges of these back to back channels I mount a rail of somewhat the ordinary type.

My present invention may be considered as an improvement on that of my Patent No. 1,566,639 issued December 22, 1925. A feature of my improvement is in the manner of mounting the rail on the upper flanges of the channel. By my present construction the upper surfaces of the abutting channels form a longitudinal groove or recess in which the lower flange of the rail fits and the flanges of the channels and flanges of the rails are preferably secured together by spring clips, thereby eliminating bolts or screw clamps or the like. In making this construction each of the upper flanges of the channels has an upturned rim and the lower flange of the rail is of such shape that it fits between the opposite rims of the two lower channels, the base of the rail resting on the flanges of the channels. The rims of the channels therefore function to hold the rail securely in place as regards lateral displacement, and the spring clips hold the rail from upward displacement.

In the construction for using the spring clips, the flange of the rail on opposite sides of the web has a slight longitudinal depression and the lower surface of the upper flanges of the channels has a slight longitudinal recess. Thus the upper flanges of the channels and the outer portions of the flange and the rail are somewhat bulbous, this affording a grip for the spring clips which are somewhat horseshoe shaped. As regards this construction, another detailed object of my invention is the construction of spring clips which may be readily detached from the rail and the channels by a special levering tool.

My invention is illustrated in the accompanying drawings in which,

Figure 1 is a perspective view of a section of track constructed in accordance with my invention;

Fig. 2 is a vertical transverse section;

Fig. 3 is a perspective view of one of the clips;

Fig. 4 is a view of the special unclamping tool.

In the illustrations, the ties are designated by the numeral 11 and with my construction I preferably use concrete ties as they will adequately support the rails without deterioration from use. In this type I mount a pair of channels designated generally by the numeral 12. Each of these channels has a web 13, a lower flange 14 resting on the ties, and an upper flange 15. This upper flange has a marginal rim 16 and a longitudinal recess 17 in the underneath surface of the flange. These channels are secured together back to back by the bolts 18 extending through the webs 13 of both channels, certain of these bolts also passing through fish plates 19 by means of which the ends of abutting channels are joined. The channels are secured to the ties in any suitable manner, the construction illustrated being by means of bolts 20 extending through clamping plates 21. These clamping plates bear on the ties and on the lower flanges of the channels. By this arrangement of the channels having the rims 16, there is a longitudinal groove or recess 22 formed by the upper surface of the channels and the rims 16.

The rails 23 have the usual head 24 and the web 25. The flange 26 has a vertical side edge 27 to fit against each rim 16. The flange is provided upon each side of the web, with a

longitudinal depression 28. By this construction the marginal or rim portion of the upper flange of the channels and of the flange of the rail are formed somewhat bulbous as indicated at 29.

The rails are secured to the top of the channels by spring clips 32. These clips have a base portion 33 adapted to fit on the outside of the rim portion of the upper flange of the channels and have upper and lower sections 34 which fit on the lower surface of the upper flange of the channels and the upper portion of the rim and flange 26. These clips have contracted neck portions 35 which fit in the depression 28 in the flange of the rail and the longitudinal recess 17 of the upper flanges of the channel. These clips may be secured in place by forcing them over the marginal edges of the channels and rail flange with a hammer or the like.

The clips may be easily disengaged from the rail and channel by use of an unclamping tool designated by the numeral 36. This tool has a lever arm 37 and an angular lever point 38. This point is adapted first to be engaged at the end or neck portion 35 of the clip as shown in the upper portion of Fig. 1 and slightly loosen the clip. Then the portion 38 may be slipped between the base portion 33 of the clip and the side of the rim 16 of the channel as illustrated in the lower portion of Fig. 1, and thus easily remove the clip from the flange of the rail and the upper flange of the channels.

Various changes may be made in the principles of my invention without departing from the spirit thereof as set forth in the description, drawings and claims.

I claim:

1. A railway construction comprising in combination a pair of channels having webs back to back, outwardly extending lower flanges adapted to bear on ties, and outwardly extending upper flanges, each flange having a vertical rim, the opposite rims and the upper surface of the channels forming a longitudinal rectangular recess, a rail having a lower flange with its vertical edges fitting between said rims in said recess and means to secure the rail to the upper flanges of the channels.

2. A railway construction as claimed in claim 1, the means to secure the rails to the channels comprising spring clips adapted to fit over the rim of the channels and underneath the upper flange of the channels and above the flange of the rail.

3. A railway construction comprising in combination a supporting structure having a web and an upper flange, said supporting structure being adapted to rest on ties, a rail having a lower flange resting on the flange of the supporting structure, and spring clips embracing the outer edges of both flanges and pressing the flange of the rail downwards upon the flange of the supporting structure, there being grooves formed in the flanges of the rail and supporting structure in which the ends of the clips are disposed.

4. A railway construction comprising in combination a pair of channels adapted to rest on ties with the backs of their webs in contact, a flanged rail resting upon the upper flanges of the channels, and spring clips pressing the flange of the rail downwards upon the flanges of the channels.

5. A railway construction comprising a pair of channels placed with the backs of their webs in contact, the lower flanges of the channels being adapted to rest on ties, the upper flanges extending outwardly, a rail having a lower flange resting on the upper flanges of the channels, the marginal edges of the upper flanges of the channels and the flange of the rail being somewhat bulbous, and a series of spring clips fitting over said marginal edges and holding the rail to the channels.

6. A railway construction comprising in combination a pair of channels having their webs secured in contact back to back, the lower flanges of the channels being adapted to rest on ties, the upper flanges having upwardly extending rims forming a longitudinal recess between the rims, a rail fitting on the upper flanges between the rims, and a series of spring clips engaging over the rims and pressing the flange of the rail downward upon the upper flanges of the channels.

7. A railway construction as claimed in claim 6, the upper surface of the flange of the rail having longitudinal depressions and the lower surface of the upper flanges of the channels having longitudinal recesses, the clips having contracted neck portions to fit into the depressions and the recesses.

8. A railway construction comprising in combination a pair of channels having their webs secured back to back with means to attach the channels to ties, each of the channels having an outwardly extending upper flange with a vertical rim forming a longitudinal recess between the rims and the upper surface of the channels, a rail having a head, a web and a lower flange, the flange having vertical side edges and fitting between said rims, the flange of the rail having a pair of longitudinal depressions on opposite sides of the web, the upper flanges of the channels having longitudinal recesses, the rim of the channels being somewhat bulbous compared with the portion of the flange of the rail and the channels adjacent the webs, and a series of spring clips somewhat U-shaped in cross section fitting over the rim of the channels and engaging underneath the upper flanges of the channels and the upper surface of the flange of the rails.

9. A railway construction comprising in combination a supporting structure having a

web and an upper flange, said supporting structure being adapted to rest on ties, a rail having a lower flange resting on the flange of the supporting structure, and spring clips pressing the flange of the rail downwards upon the flange of the supporting structure, said clips engaging within portions of restricted thickness in said flanges to resiliently retain the clips against accidental lateral displacement.

In testimony whereof I have signed my name to this specification.

LOUIS M. ADAMS.