Oct. 11, 1938. T. MANEY 2,132,572

RAIL FASTENING

Filed May 11, 1934 2 Sheets-Sheet 1

Fig. 1.

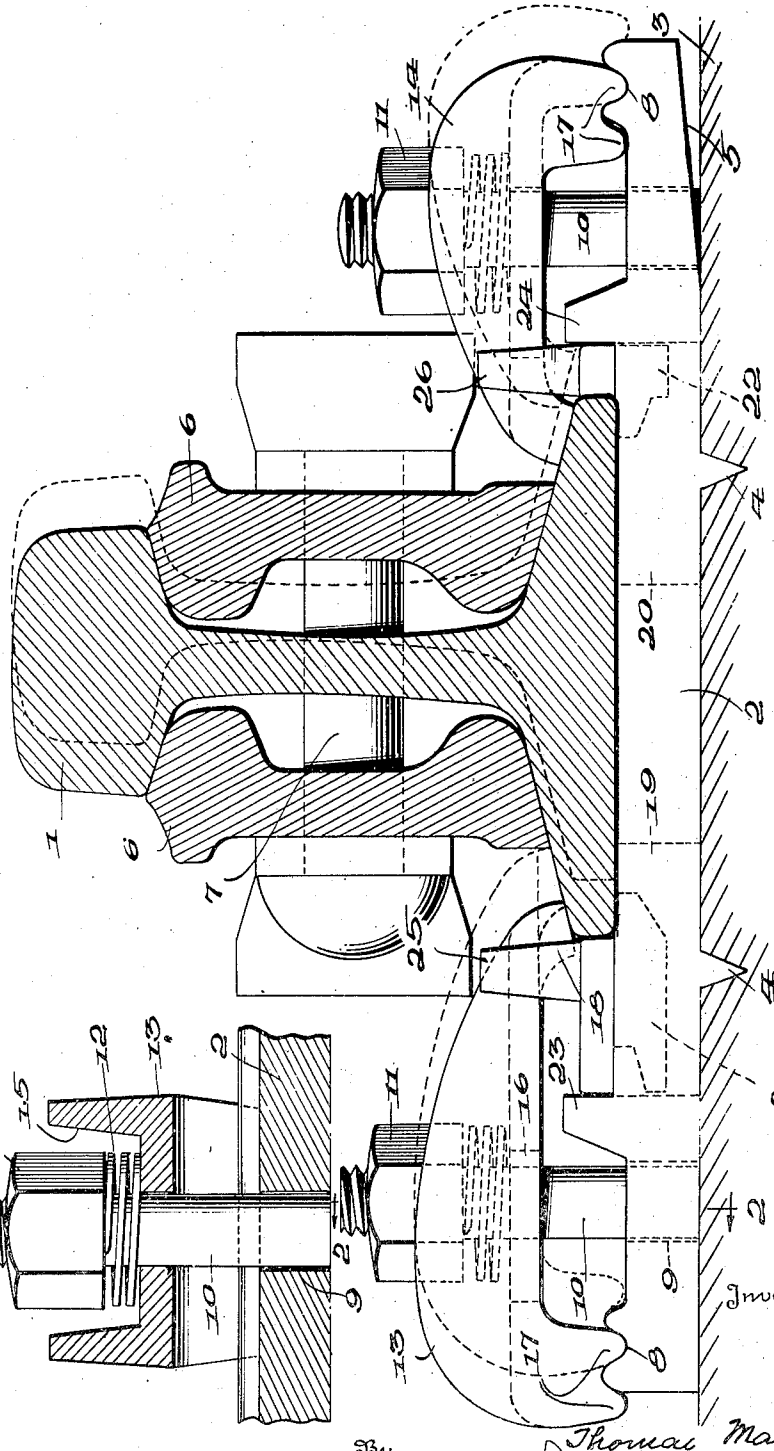


Fig. 2.

Inventor

Thomas Maney

By Vernon E. Hodges Atty

Attorney

Oct. 11, 1938. T. MANEY 2,132,572

RAIL FASTENING

Filed May 11, 1934 2 Sheets-Sheet 2

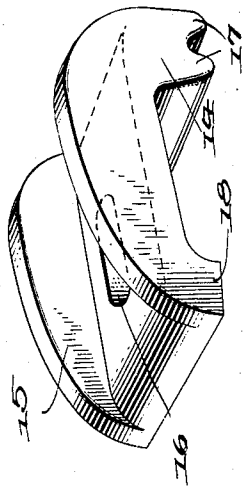


Fig. 4.

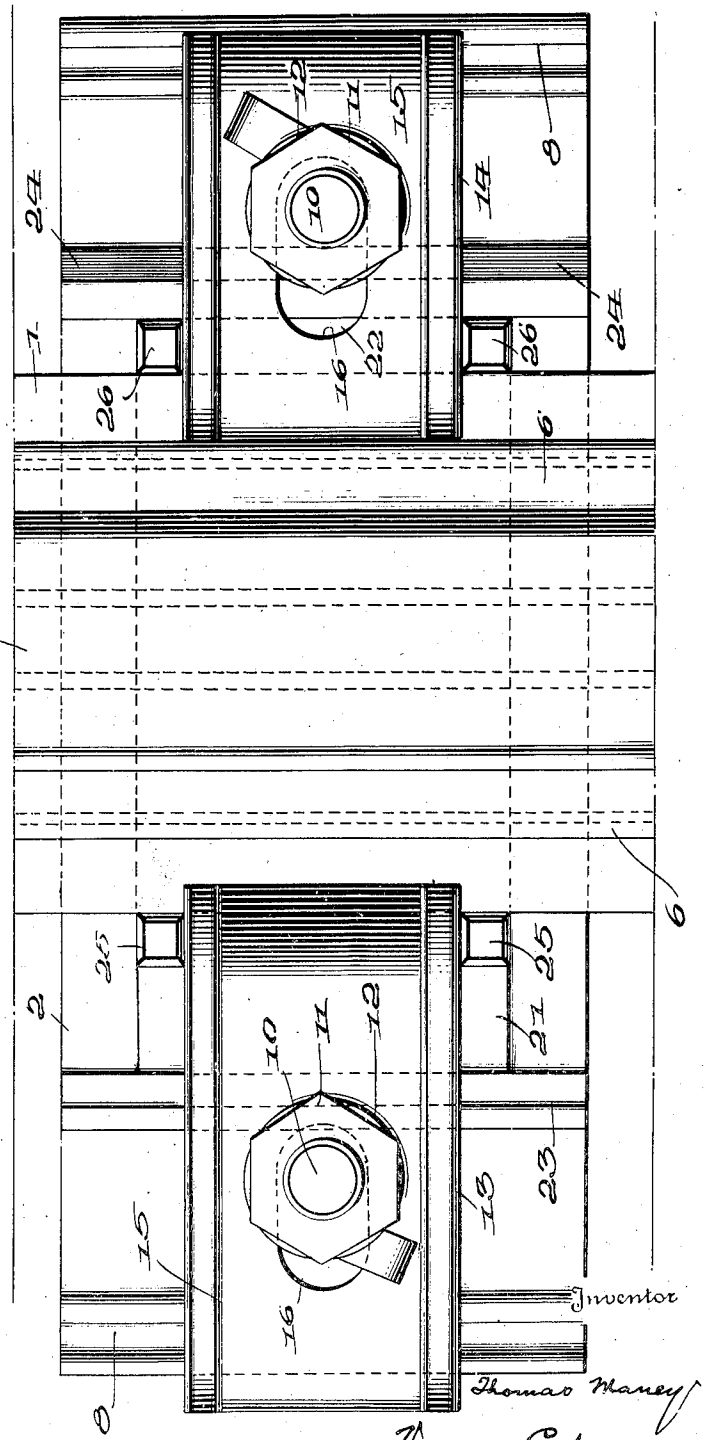


Fig. 3.

Inventor
Thomas Maney
By Venner E. Hodges
His Attorney

Patented Oct. 11, 1938

2,132,572

UNITED STATES PATENT OFFICE

2,132,572

RAIL FASTENING

Thomas Maney, Louisville, Ky.

Application May 11, 1934, Serial No. 725,200

6 Claims. (Cl. 238—304)

This invention relates to an improvement in rail fastenings, and has particular reference to the fastening of the rail at the rail joint to avoid interference with the splices and may be used interchangeably with the intermediate spring clip construction, such as shown in either of my former applications, Ser. No. 556,206, filed July 27, 1931, on Tie plate construction, or Ser. No. 707,556, filed January 20, 1934, on Rail fastenings.

The spring clips disclosed in my former applications do not provide for the requisite adjustment of the rail at the joint by reason of the fact that the rail splices occupy the greater portion of the rail base, so that if the rail should be adjusted it would be difficult to maintain sufficient bearing of the spring clip on the rail base, and at the same time provide the requisite clearance, unless the clip is adjustable. In my former applications, there was no provision for bodily adjusting the spring clips.

My present invention provides for bodily adjustment of the clip relative to the tie plate to accommodate for adjustment of the rail, which adjustment is permitted by reason of the multiple teeth at the outer end of the clip, which may alternately engage the groove provided in the tie plate.

Another feature of the invention is the construction of the clip in channel-shape which gives maximum beam strength, and permits low seating of the nut, conforming to the height of the intermediate spring fastening, so that all bolts will be of the same height and of minimum length.

Another feature of the invention is the construction of the adjusting members or pieces which instead of having central bosses, as in my application Ser. No. 707,556, have bosses at opposite ends, which confine either the intermediate or joint clips, thereby facilitating the interchangeability of the clips.

In the accompanying drawings,

Fig. 1 is a side elevation of a tie plate and rail fastening construction, showing the rail and splices in section;

Fig. 2 is a partial vertical sectional view therethrough on the line 2—2, of Fig. 1;

Fig. 3 is a top plan view of the rail fastening construction; and

Fig. 4 is a perspective view of the clip detached.

The main rail is designated 1 and is seated on a tie plate 2, secured to a cross tie 3. The undersurface of the tie plate 2 may have the usual ribs 4, if desired, to hold the tie plate in position on the tie and the inner end of the tie plate may have an inclined under surface 5, for proper seating of the tie plate. The rail is shown as having splices 6, secured to opposite sides thereof, as usual at a joint, being secured together and to the rail by the usual bolt or bolts 7.

The tie plate 2 has a rounded groove 8, at the outer and inner ends for seating the clips which grooves are formed by flanking ribs on the upper surface of the tie plate, and in order to secure the construction in place, the tie plate has openings 9 therein, through which bolts 10 pass, the upper ends of the bolts being screw-threaded and having nuts 11 screwed thereon. A coil spring nut lock 12 surrounds each bolt, tending to prevent removal or accidental displacement of the nut therefrom.

Outer and inner clips are designated, respectively, 13 and 14, being similar in shape, except that the outer clip is slightly longer. Each clip is constructed in channel shape in cross section, as shown in Figs. 2, 3 and 4, having a channel 15, receiving the nut 11 and its nut lock 12. The channel shape gives maximum beam strength and permits low seating of the nut, conforming to the height of the intermediate spring fastening, so that all bolts will be of the same height and of minimum length. The bolt 10 extends through a slot 16 in the clip to permit adjustment of the clip inwardly relative to the tie plate. The outer end of each clip is provided with rounded teeth 17, either one of which may fit in grooves 8, in accordance with the adjusted position of the clip for limiting outward movement of the clip relative to the tie plate. By reason of this interfitting of the definitely rounded grooves 8 in the tie-plate and correspondingly-shaped teeth 17 at the outer ends of the clips, a hinged connection is provided, giving freedom of upward and downward movement of the free ends of the clips in response to the well-recognized wave action of the rails with each passing locomotive or train, thereby greatly reducing the tendency of the rails to creep.

The forward end of each clip is provided with a down-turned toe portion 18, for bearing on the base flange of the rail. At the joint in the rail, the rail splices occupy most of the space of the rail base except approximately ⅞" at each edge of the rail base, and as the rail may be shifted as much as $\frac{9}{16}$", adjustment of the clip is necessary in order to obtain sufficient bearing of the clip upon the rail base when the rail is adjusted. To obtain this adjustability, the clip 13 or 14 may be bodily adjusted relative to the tie plate and held in place by fitting of either of

the teeth 17 into the groove 8. By reason of this construction, one set of clips will serve all rail combinations, thereby saving the cost of a multiplicity of patterns.

To provide for adjustment of the rail relative to the tie plate, the latter is provided with slots 19 and 20 therein for receiving adjusting pieces 21 and 22, respectively. The size and shape of these adjusting pieces may be varied as desired, in accordance with the disclosures of my former applications, Ser. No. 556,206, and Ser. No. 707,556, which adjusting pieces extend into the slots and have portions interposed between tie plate shoulders 23 and 24, and the adjacent edges of the main rail base.

The adjusting pieces 21 and 22 are provided with upstanding bosses 25 and 26, each adjusting piece having a pair of bosses arranged at opposite ends thereof, straddling the clip 13 or 14, in order to hold it in place. In this manner, the adjusting pieces may be used either for the rigid joint clips or for the intermediate clips, such as referred to in my prior applications which are of the same width.

The smaller adjusting piece 22 may be used for widths ranging from 3/8" to 29/16" (as in the construction shown 29/16"), so by removing the small adjusting piece 22 and replacing it behind the larger adjusting piece 21, each rail may be drawn in the width of the smaller adjusting piece. When the track gauge becomes as much as 29/16" open from rail wear and other causes, the track gauge may be corrected from one side of the track only. If the track gauge again becomes open to the same extent, a second correction may be made from the opposite side. The limited life of the rails would make it unnecessary for further readjustment and the new rails, replacing the old, would of course be laid with the original adjustment, subject to similar readjustment.

I claim:

1. In a rail fastening, the combination with a rail, of a tie plate receiving the rail for lateral adjustment of the rail thereon, one or more adjusting pieces for the rail interposed between the rail and a portion or portions of the tie plate, the tie plate having grooves in the upper surface thereof adjacent opposite ends thereof, a pair of clips, each having down-turned opposite end portions, one of said portions having a plurality of teeth thereon in position for selective engagement with the respective groove according to the adjusted position of the rail on the tie plate, the other down-turned end portion of each clip being in overlying relation and bearing upon a base flange of the rail, and means for holding the clips against displacement.

2. In a rail fastening, a clip having a longitudinally extending channel in the upper surface thereof, said clip having down-turned opposite end portions, one of said end portions being adapted to bear on a base flange of a rail and the other end portion being adapted to engage a tie plate, said last-mentioned end portion having a plurality of teeth thereon for selective engagement with a portion of the tie plate for adjustment of the clip and rail relative thereto.

3. In a rail fastening, the combination of a tie plate having shoulders thereon spaced apart a distance greater than the width of the rail base flange and adapted to receive a rail between the shoulders, spacing means interposed between one or more of said shoulders and the adjacent edge or edges of the rail base flange, said tie plate having spaced ribs thereon outwardly of the shoulders with a groove between the ribs, and a clip having downturned opposite end portions and arranged in bridging relation across the adjacent shoulder free of said shoulder with its inner end portion in position to bear upon the rail base flange, the outer end portion having a plurality of teeth arranged in position to engage selectively in the groove in adjusted positions of the rail.

4. In a rail fastening, the combination with a rail, of a tie plate therefor having shoulders thereon spaced apart a distance greater than the width of the rail base flange and receiving the rail between the shoulders, spacing means interposed between one or more of said shoulders and the adjacent edge or edges of the rail base flange, said tie plate having spaced ribs thereon outwardly of each of the shoulders with a groove between each pair of shoulders, clips at opposite sides of the rail, each clip having downturned opposite end portions and arranged in bridging relation across the adjacent shoulder free of said shoulder with its inner end portion bearing upon the rail base flange and the outer end portion having a plurality of teeth selectively engaging in the groove in adjusted positions of the rail, and means for holding the clips against displacement.

5. In a rail fastening, the combination of a tie plate having upstanding shoulders thereon spaced apart a distance greater than the width of the rail base flange to receive a rail thereon between the shoulders and for lateral adjustment of said rail, spacing means interposed between one or more of said shoulders and the adjacent edge or edges of the rail base flange, said tie plate having a pair of spaced ribs thereon forming a groove therebetween and spaced outwardly of the tie plate from the adjacent upstanding shoulders with a bolt hole through the tie plate between the pair of ribs and adjacent shoulder, and a clip having downturned opposite end portions for bridging across said shoulder between the rail base flange and ribs, the outer end of said clip having a pair of teeth thereon to engage alternately in the groove in adjusted positions of the rail and clip.

6. In a rail fastening, the combination with a rail, of a tie plate therefor having shoulders thereon spaced apart a distance greater than the width of the rail base flange and receiving the rail between the shoulders, spacing means interposed between one or more of said shoulders and the adjacent edge or edges of the rail base flange, said tie plate having only a pair of spaced parallel ribs thereon at each opposite end forming a groove between the ribs of each pair, clips at opposite sides of the rail, each clip having downturned opposite end portions and arranged in bridging relation across the adjacent shoulder free thereof with its inner end portion bearing upon the rail base flange, and the outer end portion having only a pair of teeth thereon to engage alternately in the groove in adjusted positions of the rail and clip, said clip having a longitudinal slot therein intermediate the downturned ends thereof, and bolt means extending through the tie plate and through said slot for holding the clip against displacement and permitting adjustment of the clip.

THOMAS MANEY.