

J. KLINKHAMMER.
TIE PLATE AND RAIL SPACING DEVICE.
APPLICATION FILED AUG. 5, 1909.

945,172.

Patented Jan. 4, 1910.
3 SHEETS—SHEET 1.

Fig. 1

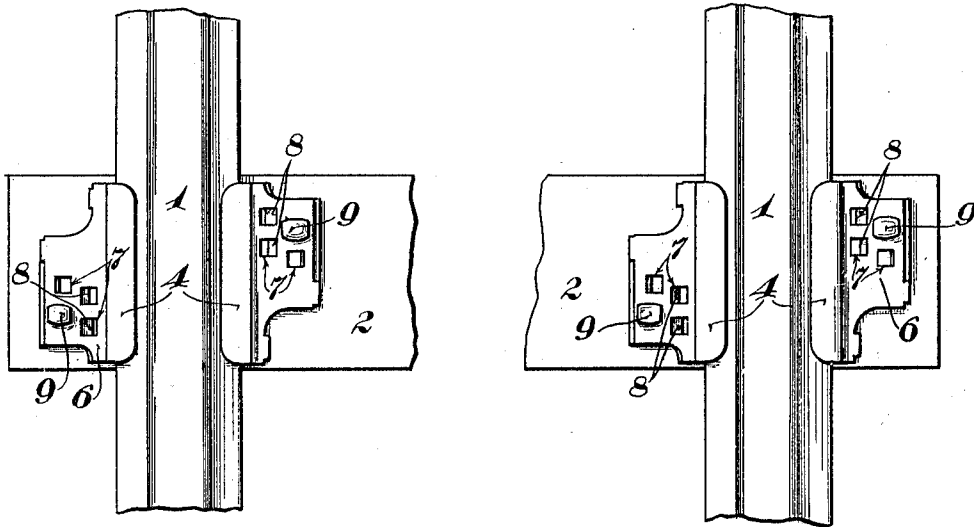
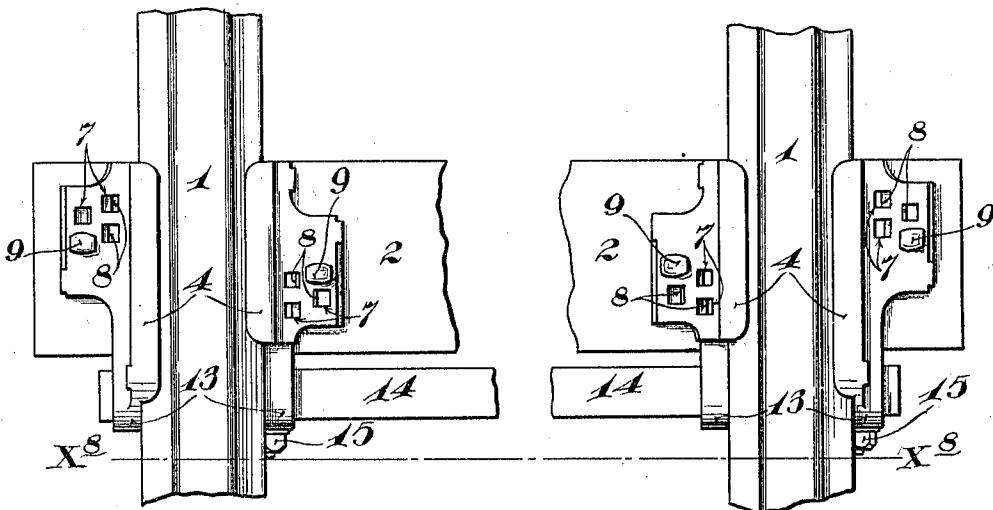


Fig. 2



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Fig. 3

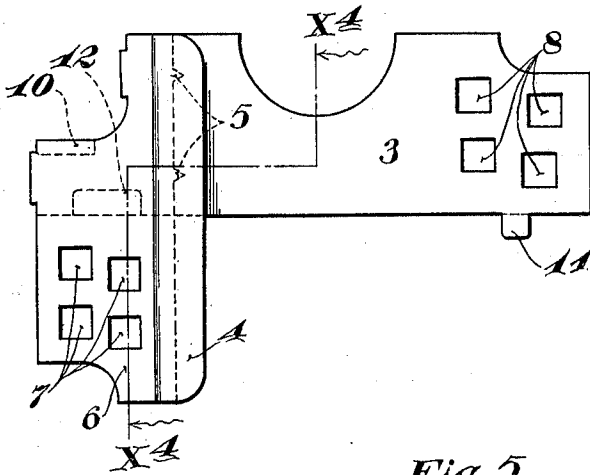


Fig. 4

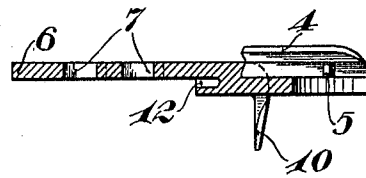


Fig. 5

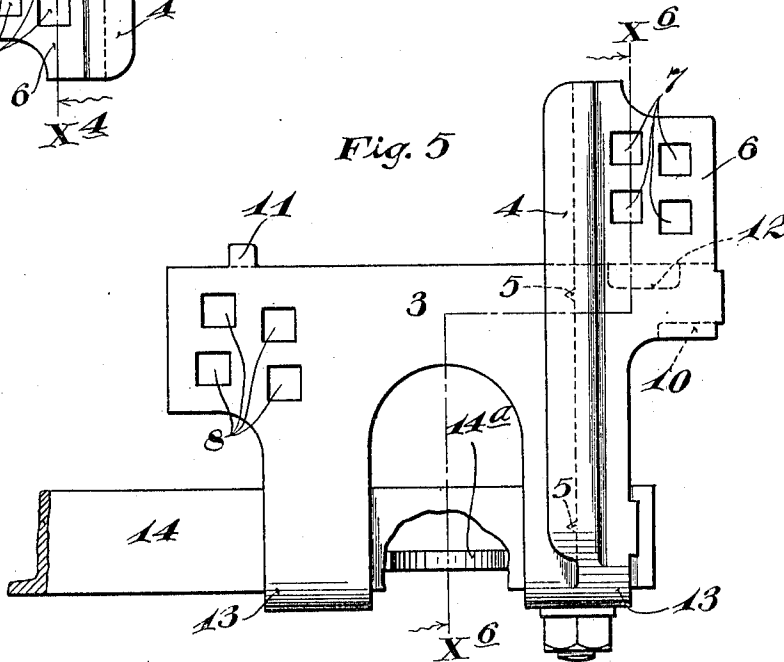
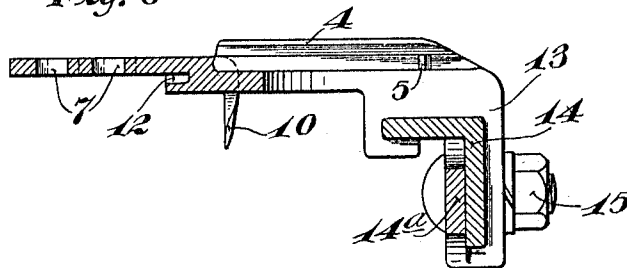


Fig. 6



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3 SHEETS—SHEET 3.

Fig. 7

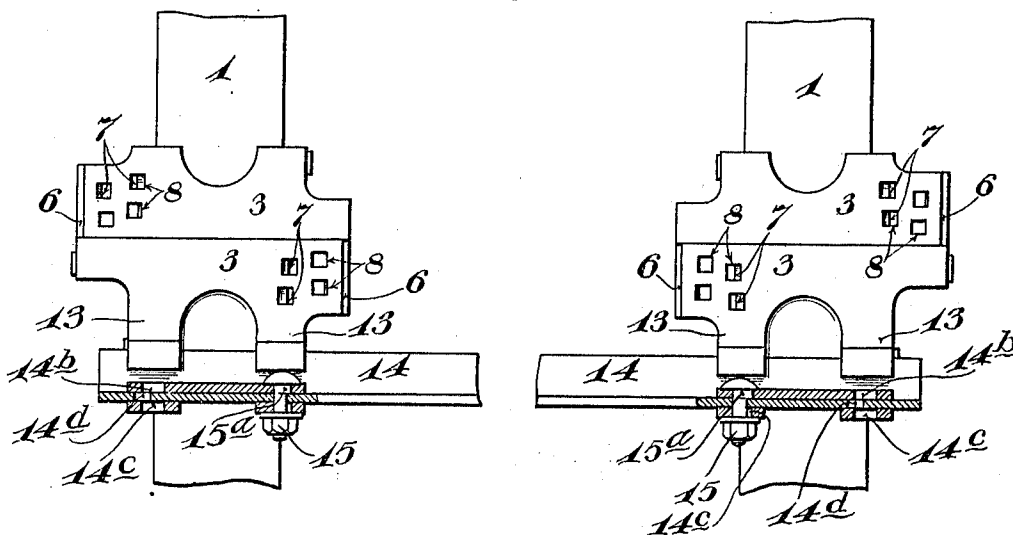
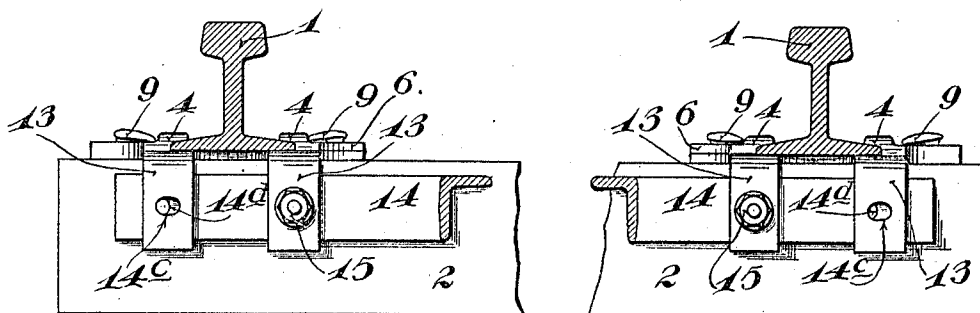


Fig. 8



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UNITED STATES PATENT OFFICE.

JOSEPH KLINKHAMMER, OF HOPKINS, MINNESOTA.

TIE-PLATE AND RAIL-SPACING DEVICE.

945,172.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed August 5, 1909. Serial No. 511,350.

To all whom it may concern:

Be it known that I, JOSEPH KLINKHAMMER, a citizen of the United States, residing at Hopkins, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Tie-Plates and Rail-Spacing Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an improved tie plate and rail spacing device, and to this end, it consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a plan view, with some parts broken away, showing the invention designed simply as a tie plate with rail clamping devices; Fig. 2 is a plan view showing the same construction shown in Fig. 1, but with an added arrangement for positively spacing rails apart; Fig. 3 is a plan view showing one member of one of the supplemental sections of the improved tie plate; Fig. 4 is a vertical section taken on the irregular line $x^4 x^4$ of Fig. 3; Fig. 5 is a plan view, with some parts broken away, showing one of the supplemental sections of one of the tie plates shown in Fig. 2 and showing also a portion of the cooperating rail spacing bar; Fig. 6 is a vertical section taken on the irregular line $x^6 x^6$ of Fig. 5; Fig. 7 is a plan view of the device shown in Fig. 2, with the rails removed and with some parts sectioned and some parts broken away; and Fig. 8 is a transverse vertical section taken on the line $x^8 x^8$ of Fig. 2.

The rails are indicated by the numeral 1 and the ties by the numeral 2.

The tie plates are made in supplemental sections that are adapted to be interlocked when applied between the ties and rails. In the construction illustrated in Figs. 1, 3 and 4, each complete tie plate is made up of two supplemental sections or tie plates 3 having rail clamping flanges 4. The rail clamping flanges 4 are adapted to overlap and rigidly hold the foot flanges of the rails and they are provided with sharp edged teeth 5 that

are adapted to be forced into the edges of the foot flanges of the said rails. These teeth 5, as best shown in Figs. 3 and 4, are located in channels formed between the tie plates 3 and the overlying intumed upper portions of the rail clamping flanges 4. Also it will be noted, particularly by reference to Fig. 3, that about one half of the said rail clamping flanges 4 overlie the respective tie plates 3 and the other one-half thereof project beyond the same, so that when two tie plates are put together, the projecting portion of the one clamping flange 4 rests upon the body of the cooperating tie plate; and attention is here called to the fact that in the construction illustrated in Figs. 1, 3 and 4, the cooperating supplemental tie plates are duplicates, the one for the other, so that they may be cast from the same pattern, and are applied by turning the same with their rail clamping flanges projecting in opposite directions.

The projecting portions of the rail clamping flanges 4 are provided with outwardly projecting horizontally extended webs 6 that lie in a plane immediately above the plane of the connected tie plate 3; and these webs 6 are provided with spike holes 7 shown as arranged in two longitudinally alined pairs. The projecting ends of the tie plates 3 are provided with spike holes 8, no one of which longitudinally alines with the other, but each being located a different distance from the clamping flanges 4, for an important purpose which will presently appear. These spike holes 8 are so arranged that when the two tie plates are put together, one of the holes 8 will aline transversely of the rails with one or the other of the spike holes 7 in the underlying web 6, but no two of the said spike holes 8 will register with two of the overlying spike holes 7 at the same time.

By reference to Fig. 1, it will be noted that spikes 9, one on each side of the rail, are driven into the tie through alined perforations 7 and 8 and that all the other spike holes 7 and 8 are set out of registration to different extents. If, for instance, the tie plates be spread transversely of the rail one-sixteenth of an inch farther apart, another pair of spike holes 7 and 8 on each side of the rail will be brought into registration, and if they be spread one-eighth of an inch or three-sixteenths of an inch in the same

direction, other spike holes will be brought into registration. This affords an extremely simple and highly efficient means for adjusting the tie plates to the base flange of rails of different width and for securing the same when properly adjusted to the rails. Because of the very considerable extent or area of the tie plates, but little pulling strain will be applied to the spike in service, and hence, two spikes, one on each side of the rail, will be found sufficient to firmly hold the rail to the tie.

To anchor the tie plates to the ties, they are preferably formed with depending anchoring lugs or barbs 10 (see particularly Fig. 4), which are adapted to be pressed into the ties. To further assist in interlocking the cooperating supplemental tie plates, the tie plate sections are provided at their abutting edges with projecting lock lugs 11 and with lug receiving pockets 12. The pocket 12 of the one tie plate is adapted to receive the lug 11 of the other tie plate, and said pockets 12, in a direction transversely of the rail, are long enough to permit the said lugs 11 first to be entered therein and the two plates thereafter moved transversely of the rail the distance required to cause the teeth 5 to be driven into the foot flanges of the rail.

The construction illustrated in Figs. 2 and 5 to 8, inclusive, is like that illustrated in Figs. 1, 3 and 4, but has the following added features for positively spacing the rails, thereby especially adapting it for use at curves, at switches and similar places in the track. In this construction, one of the tie plates 3, at one side of the tie, is provided with laterally spaced angular brackets 13 integrally cast therewith and constructed to closely fit the end of an angle iron tie bar 14. By reference particularly to Fig. 6, it will be noted that the lower portions of the brackets 13 are arranged to embrace the downturned flange of the angle iron bar 14, being provided with an upturned inner flange 14^a adapted to be clamped against the said angle iron, by a nutted bolt 15. The bolt 15 is provided, adjacent to its head, with an eccentric portion 15^a that is adapted to fit elongated perforations 14^b of the flange 14^a, and the depending portion of each bracket 13 is provided with elongated perforations 14^c that aline with the respective perforations 14^b and through which the round stem of the bolt 15 is adapted to be passed. The depending flange of the angle iron space bar 14 is provided with perforations 14^d that are adapted to closely fit the round stem portion of the bolt 15. By reference particularly to Fig. 7, it will be noted that the perforations 14^b and 14^c, in the two relatively fixed brackets 13, are so spaced that they do not register with the cooperating perforations 14^d at the same time and, hence, but one

bolt 15 can be applied at one time to one of the sectional tie plates. One bolt 15 is, of course, applied to each end of the spacing bar. When the eccentric portion 15^a thereof is turned in one direction, one adjustment is accomplished, and when it is turned in the opposite direction another adjustment is accomplished, and by thus applying the bolt at different times and in different perforations of the relatively fixed brackets 13, four different adjustments are provided for at each side of the track, making possible eight different adjustments transversely of the track, in the connections between the spacing bar and the tie plates.

It will, of course, be understood that various modifications of the construction above described may be made within the spirit of my invention. For instance, the relatively fixed brackets 13, instead of being laterally spaced, might be extended and united. In fact, as shown in Fig. 5, the inner flange 14^a of the two brackets 13 is a single member.

Rails secured by the device above described will be very securely held both against lateral rocking movements and against endwise creeping movements, the latter movement being prevented by the engagement of the teeth 5 with the foot flanges thereof.

What I claim is:

1. A tie plate made up of supplemental sections having overlapping parts formed with differentially spaced spike holes adapted to be brought into registration in different positions and said sections being provided with rail clamping flanges and with teeth engageable with the foot flanges of the rail to hold said rail and prevent creeping thereof, substantially as described.
2. A tie plate made up of supplemental sections having overlapping parts formed with differentially spaced spike holes adapted to be brought into registration in different positions, substantially as described.
3. A tie plate made up of supplemental sections having rail clamping flanges and overlapping parts, the latter having both inside and outside of the rail clamping flanges differentially spaced spike holes adapted to be brought into registration under different adjustments of the said supplemental sections, substantially as described.
4. The combination with a pair of tie plates having rail-clamping flanges and means for securing the same to the rails and to the tie, of a spacing bar, said spacing bar having round perforations and said tie plates having elongated perforations, and bolts having eccentric portions cooperating with the said round and elongated perforations for rigidly but adjustably connecting said bar to said tie plates.
5. The combination with a pair of tie plates having rail clamping flanges, means

for securing the same to the rails and to the tie, and having depending brackets at one side of the tie, of a spacing bar, said spacing bar having round perforations and said
5 brackets having elongated perforations, and bolts having eccentric portions coöperating with the said round and elongated perforations for rigidly but adjustably connecting

said bar to said brackets, substantially as described.

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

JOSEPH KLINKHAMMER.

Witnesses:

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