

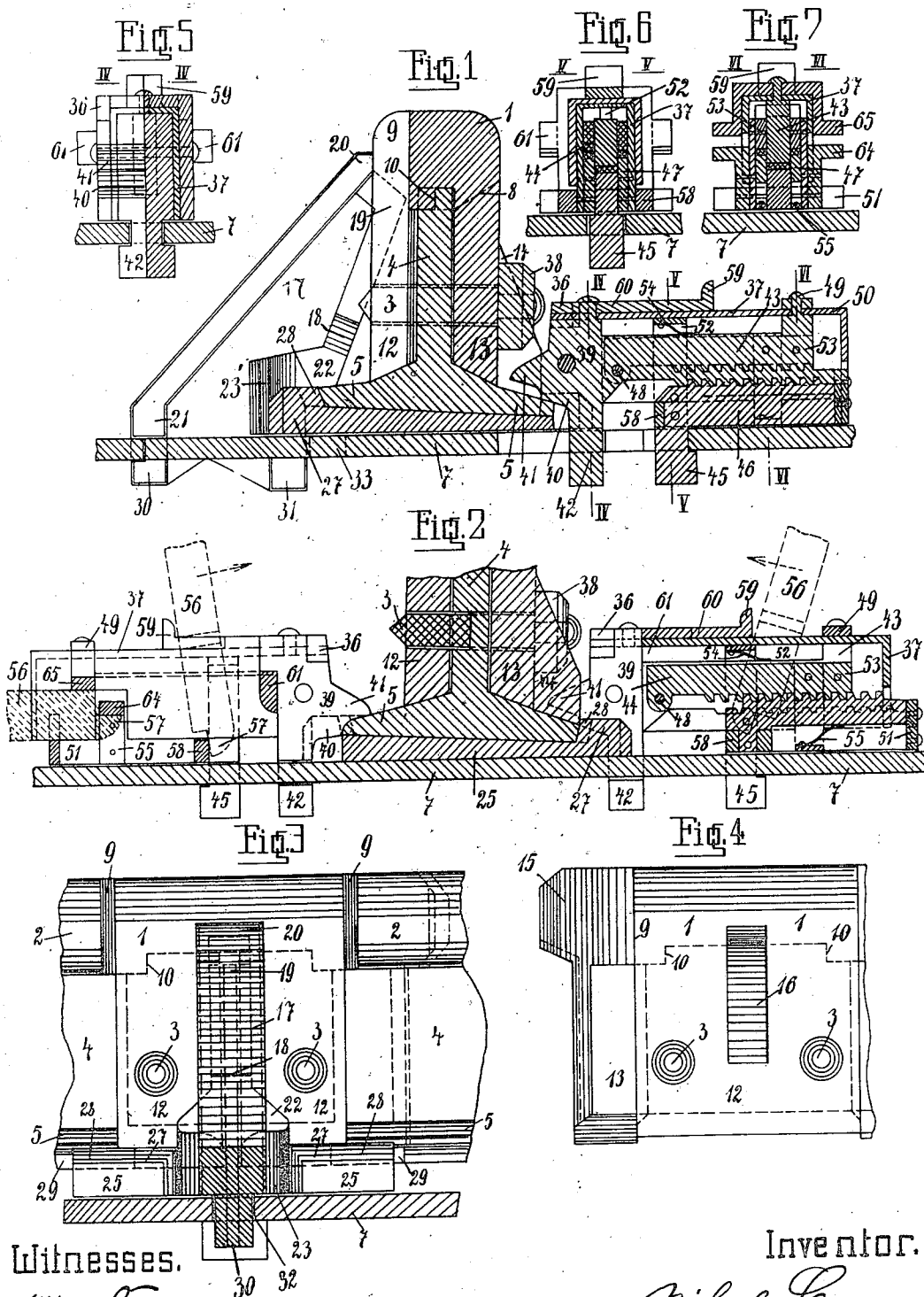
M. SLOKAR.
RAIL JOINT.

APPLICATION FILED OCT. 18, 1910.

Patented Jan. 21, 1913.

1,051,023.

3 SHEETS—SHEET 1.



Witnesses.

Wm. Sagner
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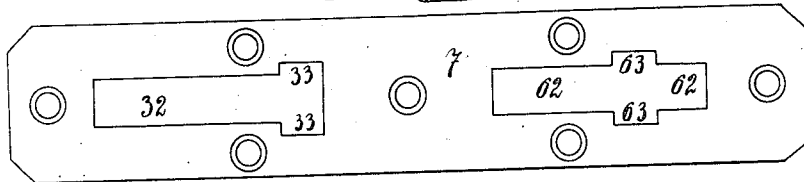
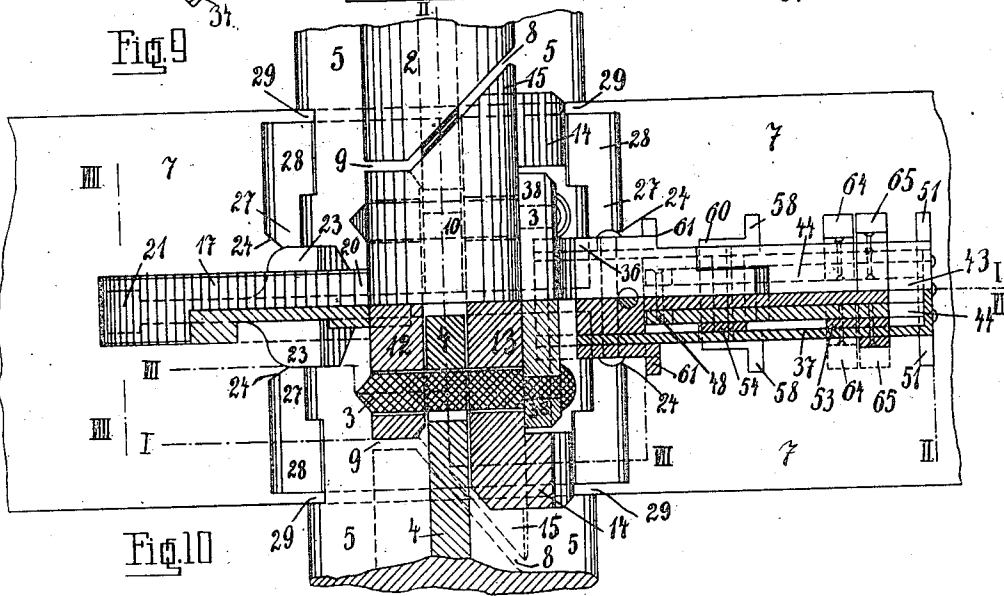
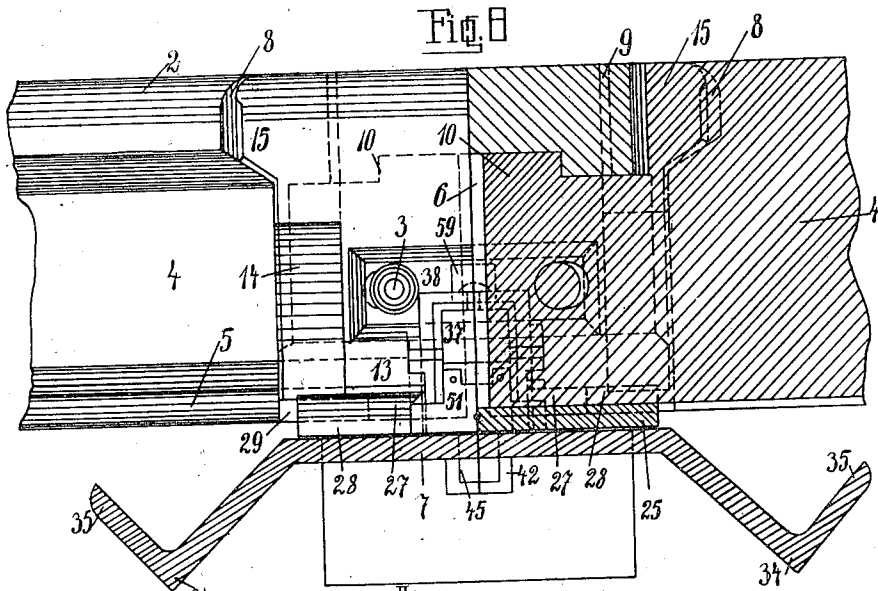
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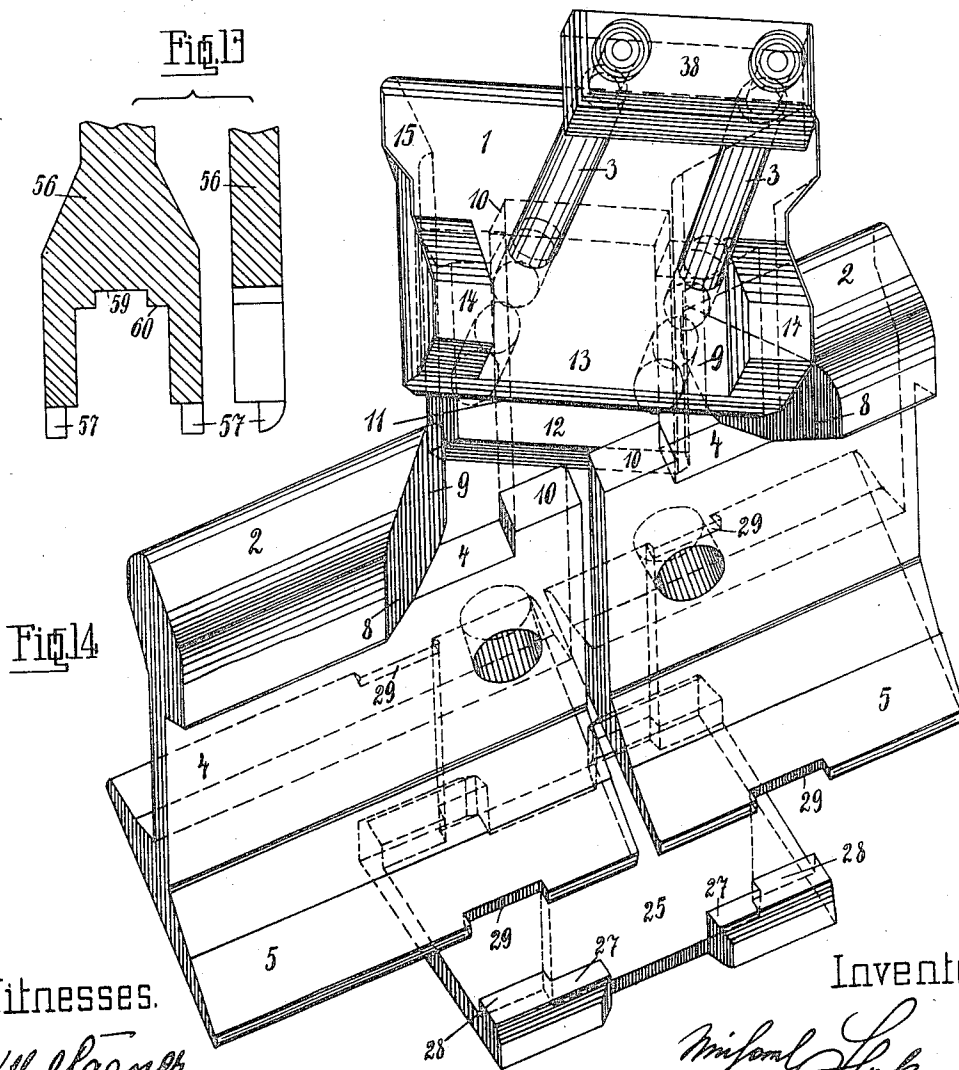
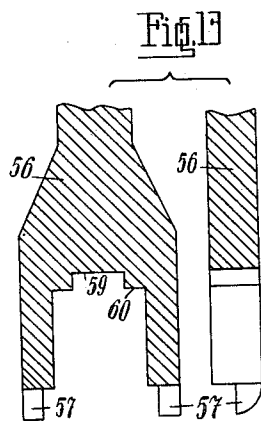
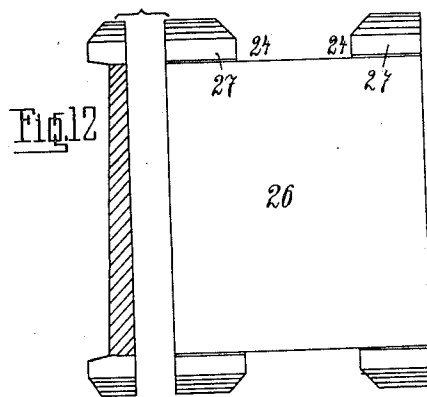
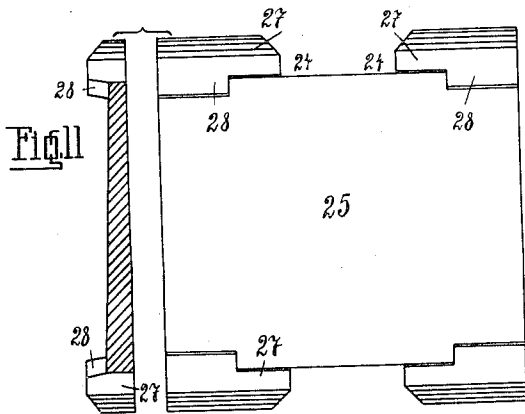
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UNITED STATES PATENT OFFICE.

MICHAEL SLOKAR, OF ZARA, AUSTRIA-HUNGARY.

RAIL-JOINT.

1,051,023.

Specification of Letters Patent.

Patented Jan. 21, 1913.

Application filed October 18, 1910. Serial No. 587,680.

To all whom it may concern:

Be it known that I, MICHAEL SLOKAR, a subject of the Austro-Hungarian Emperor, and residing at Zara, Austria-Hungary, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

The subject-matter of my invention is a rail joint, in which slice bars and bolts for connecting the rail ends one to another and the latter to the ties are not employed.

My invention substantially consists in the combination of a member, hereinafter called the core, inserted between the rail ends with a serrated tie-plate which connects the rail ends and consequently is a substitute for the splice bar, special attachment devices being provided for connecting the rail joint with the tie.

One illustrative embodiment of my invention is represented by way of example in the accompanying drawings, wherein:—

Figure 1 is an end elevation, partly in section on the bent line I—I in Fig. 9; Fig. 2 is a like view, partly in section on the bent line VII—VII in Fig. 9; Fig. 3 is a side elevation, showing the outside of the rail, partly in section on the line VIII—VIII in Fig. 9, and Fig. 4 is a side elevation showing the outside of the core; Fig. 5 is a section on the line IV—IV in Fig. 1, Fig. 6 a section on the line V—V in Fig. 1 and Fig. 7 a section on the line VI—VI in Fig. 1; Fig. 8 is a side elevation of the rail joint, partly in longitudinal section, Fig. 9 a plan view of the same partly in horizontal section, and Fig. 10 is a plan view of the iron tie-plate for wooden ties; Fig. 11 is a plan, and section, showing a joint plate and Fig. 12 a like view showing the intermediate plate, while Fig. 13 comprises two sectional elevations taken at right angles to one another showing the forked end of the clamping rod forming the only assembling tool, and Fig. 14 is an isometric projection illustrating the insertion of the core with the twin bolt at the inner side of the rail.

Referring to the drawings, my improved rail joint comprises a core 1 which is inserted from above between the suitably cut ends 2 of the rail head and held down by the threadless twin bolt 3. For this purpose, the webs 4 and the rail bases 5 are cut off perpendicularly in the manner usual heretofore, the ends of the rails are pushed together on a central tie 7 and mounted per-

fectly centrally, a space 6 being provided for expansion. In the rail heads 2, on the contrary, the ends of the rails are cut away the length of the core 1 and each end is cut off at an obtuse angle at the inside at 8 and at right angles at 9, as clearly shown in Fig. 9.

In the web 4 I provide lugs 10 and a recess corresponding thereto at 11 in the core 1. This core is cut to fit the ends of the rail heads, there being provided between these and the ends of the core an expansion joint which runs slantwise and is half the normal breadth, as shown in Fig. 9. The core is grooved its entire length for receiving the web 4; its two cheeks 12 and 13 extend on both sides of the web 4 to the base 5 and rest on the latter. For bedding it better, the cheek 13 on the inside is strengthened at both ends by the projecting shoulders or abutments 14 which rest on the top face of the base 5 of the rail. In consequence of the slanting joints in the rail head 2 the cheek 13 of the core 1 is supported vertically at the part 15 and is longer than the cheek 12. The latter is only sufficiently long to provide holes in the same for the twin bolt 3. The cheek 12 is provided in addition with a recess 16 for receiving the stay 17. This latter is an iron plate reinforced with ribs 18, 19, 20, 21 at its edges, resting at 22 on the base 5 of the rail, and possessing shoulders or abutments 23 which enter into the recesses 24 in the tie-plates 25 or 26 and embrace the base 5 of the rail. It lends the rail a greater pressure basis, and the rail is thereby prevented from tilting over even when the base clamp is not perfectly tensioned.

The tie-plates 25, 26 are necessitated to provide the slanting position of the rails and are wedge-shaped in section, as shown in Figs. 11 and 12. They are provided at each side with two upwardly projecting ribs 27 which embrace the base 5. Further, inwardly projecting teeth 28 are provided on the plates 25 which engage in corresponding notches 29 in the base 5 of the rail and allow the rails to shift longitudinally only an amount occasioned by expansion, while they prevent the rails creeping and also contribute in maintaining the central position of the rail ends on the common tie.

The tie-plates rest on the ties 7. These are connected with the rails on the one hand by the stays 17, each of which has a

shoulder or lug 30 shaped like a nail head at 21 and a 1-shaped lug 31 at 23' engaging in an oblong hole 32 in the tie 7. In order to insert the lug 31 into this hole, the latter is enlarged at 33. If the tie 7 is shifted longitudinally into the position shown in Fig. 1, the tie and stay become firmly connected. The tie 7 is preferably of a section according to Fig. 8, in which only the downwardly-directed edges 34 on both sides of the outwardly directed limbs 35 engage in the ballast, whereby increased capability of carrying is obtained, in consequence of utilizing the breadth of the ties better and the ballast can be tamped along the limbs 35.

The twin bolt 3 requires no attachment because, after the base of the rail has been clamped, the center of the common head plate 38 is in front of the head 36 of the clamp 37 and is thereby perfectly prevented from sliding out.

The head plate 38 of the twin bolt is located on the inner side of the rail. The clamp 37 for the base of the rail is located here also; this clamp serves, on the one hand, for holding down the base 5 of the rail and, on the other hand, for securing the bolt 3 and for enabling the rails to be displaced relatively to the stay 17 of the rail head, whereby the attachment of the rail with the tie becomes stable and cannot work loose.

The clamp comprises the clamp head 39 and the projections 40 and 41, the former being employable at the inner and the latter at the outer side of the rail; also, the foot 42 engaging under the clamp head, the toothed racks 43 and 44 extended backward, the hooks 45 and the toothed racks 46 and 47; a casing 50 incloses all these parts.

The function of displacing and adjusting the clamp 37 is performed by the three racks 43 and 44, whose teeth diverge $\frac{1}{3}$ of the length of a tooth from one another, so that when the clamp is shifted always one of the three racks remains operative, whereby the number of teeth can be kept large and nevertheless it is possible to adjust the clamp by small amounts. The central, larger rack 43 is firmly welded to the clamp head 39, while the two other racks 44 are arranged pivoted on both sides of the same on a rivet or bolt 48. The center rack 43 has its rear end enlarged upward, thereby forming a rivet or bolt 49 for the attachment of the casing 50. With the central rack 43 there corresponds the counter rack 46 which is welded to the hook 45, on which the counter racks 47 located on both sides of the same are riveted with one another and also at the rear end to a plate 51. The teeth of the two outer pairs of racks are placed rather higher than those of the central rack in order to avoid friction and knocking off the teeth.

The racks are guided by two small frames 52 and 53, the former being attached to the hook 45 and the latter by rivets at 53 to the two upper lateral racks 44. Springs 54 and 55 are arranged at the above mentioned frames for causing the racks to engage more certainly. A rod 56, shaped specially according to Fig. 13, having projections 57 is used for shifting the clamp 37 relatively to the base of the rail. After the clamp has been inserted into the groove in the tie it can be displaced by placing the rod 56 on it in such manner that the projections 57 embrace both sides of the clamp 37 at the bow 58 secured to the hook 45, as is represented at the right-hand of Fig. 2 in which the rod 56 is shown in dotted lines. In order to enable the lever or rod 56 to operate when the clamp 37 is displaced according in each instance to the extension of the same, shoulders 59 and 60 are provided on the back of the rod and hook-shaped plates 61 are riveted to the two sides of the clamp.

In the event of removing the rails and for pushing together the hooks 42 and 45 for the purpose of adjusting the clamp 37 for altering the gage, the three racks 43 and 44 must be released simultaneously by means of the lever 56. To this end, for lifting the racks 44 a shoulder 64 is provided on the frame 55 at each side of the casing, and for lifting the central rack 43 the bow 59 provided at both sides with shoulders 65 is attached to the back of the casing, so that all four shoulders 65 and 64 can be seized simultaneously by the rod 56. The rod is placed on the plate 51 and used as a lever to release the upper racks 43 and 44, whereby it is possible to shift the clamp head 39 together with the hook 42 in the opposite direction to the teeth with the aid of a second lever, as is indicated by dotted lines at the left of Fig. 2. For dismantling the clamp recesses 36 suitable for receiving the point 57 of the lever are provided also in the top part at both sides of the clamp head. The hooks 42 and 45 engage in the grooves 62, 63 in the tie 7 in like manner as the lugs 30, 31.

I claim:—

1. The combination, with a tie and a tie-plate thereon, of two rails having their ends resting on the tie-plate, the rail heads being cut away at the rail ends, a core between the rail heads and embracing the webs of the rails, means detachably attached to the tie engaging said core, and adjustable means detachably attached to the tie engaging the bases of the rails and securing the same on the tie-plate.

2. The combination, with a tie and a tie-plate thereon, of two rails having their ends resting on the tie-plate, the rail heads being cut away at right angles and partially beveled, substantially as shown, at the rail ends,

a core having a head portion adapted in shape to the ends of the rail heads between the rails and embracing the webs of the rails, means detachably attached to the tie engaging said core, and adjustable means detachably attached to the tie engaging the bases of the rails and securing the same on the tie-plate.

3. The combination, with a tie and a tie-plate thereon, of two rails having their ends resting on the tie-plate, the rail heads being cut away at right angles and partially beveled, substantially as shown, at the rail ends leaving upwardly-extending projections on the webs, a core having an upper portion adapted at its ends to the ends of the rail heads between the rails, said core having cheeks embracing the webs of the rail and a recess receiving said projections, means detachably attached to the tie engaging said core, and adjustable means detachably attached to the tie engaging the bases of the rails and securing the same on the tie-plate.

4. The combination, with a tie and a tie-plate thereon, of two rails having their ends resting on the tie-plate, the rail heads being cut away at right angles and partially beveled, substantially as shown, at the rail ends, a core having a head portion adapted in shape to the ends of the rail heads between the rails and embracing the webs of the rails, a smooth, twin bolt passing through the core and the webs of the rail, means detachably attached to the tie engaging said core, and adjustable means detachably attached to the tie engaging the bases of the rails and securing the same on the tie-plate and preventing said bolt coming out of the core.

5. The combination, with a perforated tie and a tie-plate thereon, of two rails having their ends resting on the tie-plate, the rail heads being cut away at the rail ends, a core between the rail heads and embracing the webs of the rails, means detachably held in the perforations in the tie, engaging in a recess in said core and resting on the bases of the rails, and adjustable means detachably attached to the tie engaging the bases of the rails and securing the same on the tie-plate.

6. The combination, with a tie and a tie-plate thereon, of two rails having their

ends resting on the tie-plate, the rail heads being cut away at the rail ends, a core between the rail heads and embracing the webs of the rails, means detachably attached to the tie engaging said core, and an adjustable clamp comprising toothed racks detachably attached to the tie engaging the bases of the rails and securing the same on the tie-plate.

7. The combination, with a tie and a tie-plate thereon, of two rails having their ends resting on the tie-plate, the rail heads being cut away at the rail ends, a core between the rail heads and embracing the webs of the rails, means detachably attached to the tie engaging said core, and an adjustable clamp, comprising guided, spring-pressed racks of different pitch and a casing inclosing the racks, detachably attached to the tie engaging the bases of the rails and securing the same on the tie-plate.

8. The combination, with a tie and a tie-plate thereon having upwardly-projecting lugs, of two rails having their ends resting on the tie-plate and having recesses in their bases for receiving said lugs, the rail heads being cut away at the rail ends, a core between the rail heads and embracing the webs of the rails, means detachably attached to the tie engaging said core, and adjustable means detachably attached to the tie engaging the bases of the rails and securing the same on the tie-plate.

9. The combination, with a perforated tie and a tie-plate thereon, of two rails having their ends resting on the tie-plate, the rail heads being cut away at the rail ends, a core between the rail heads and embracing the webs of the rails, means detachably held in the perforations in the tie, engaging in a recess in said core and resting on the bases of the rails, and adjustable means detachably attached to the tie engaging the bases of the rails and securing the same on the tie-plate, the perforations in the tie being oblong with rectangular transverse enlarged portions.

MICHAEL SLOKAR.

Witnesses:

FRAU VINCINIG,
VINCENT BURES.