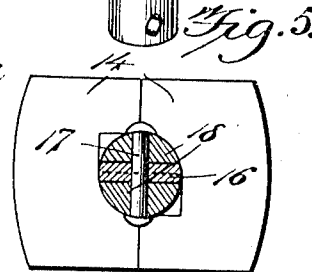
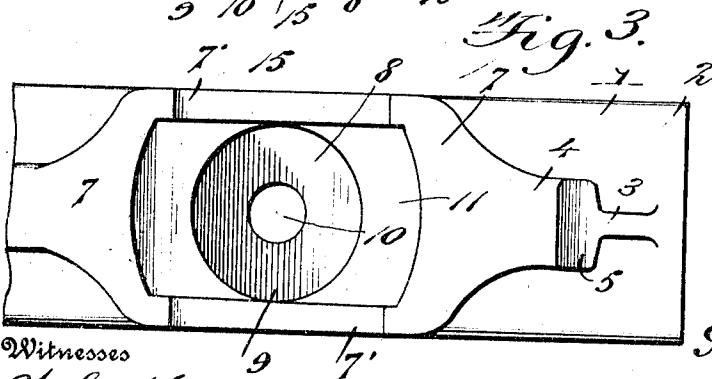
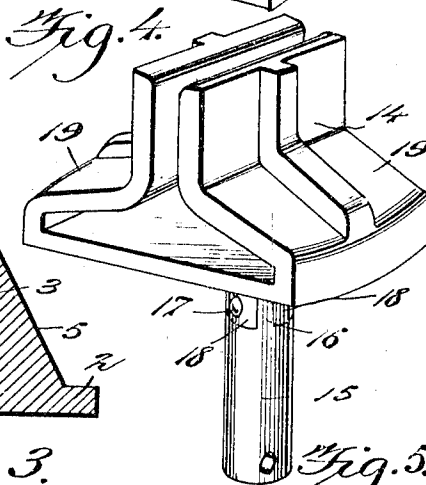
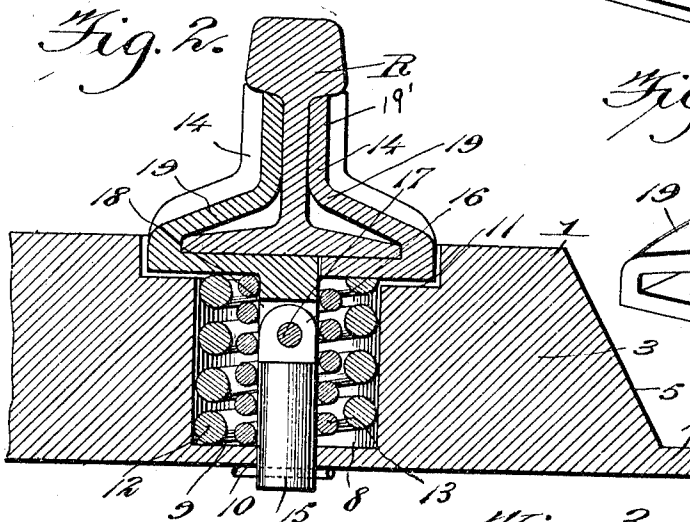
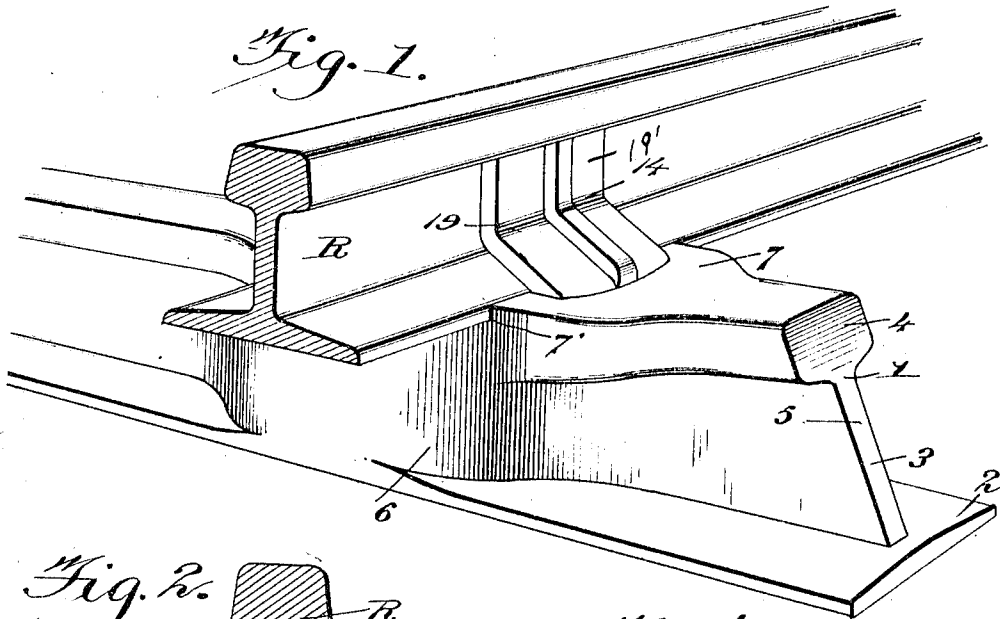


H. R. VENSEL.
STEEL RAILROAD TIE.
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STEEL RAILROAD-TIE.

1,063,927.

Specification of Letters Patent.

Patented June 3, 1913.

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To all whom it may concern:

Be it known that I, HARRY R. VENSEL, a citizen of the United States, residing at Creekside, in the county of Indiana and State of Pennsylvania, have invented new and useful Improvements in Steel Railroad-Ties, of which the following is a specification.

The present invention relates to improvements in ties for railroad rails.

In carrying out my invention it is my purpose to construct a steel tie for railway rails which shall be provided with novel but effective means for securing the rails upon the ties and which also shall afford the rails the desired amount of yieldability.

Another object of the invention is the provision of a tie of this class with simple but effective rail securing means which will effectively prevent either an upward or lateral movement of the rails but which shall permit of the desirable longitudinal movement of the said ties incident to the contraction or expansion of the same.

With the above recited objects in view and others which will appear as the nature of the invention is more fully understood, the improvement resides in the construction, combination and arrangement of parts set forth in the following description and falling within the scope of the appended claims.

In the drawing: Figure 1 is a perspective view of a tie and rail securing element for a railway rail constructed in accordance with the present invention, Fig. 2 is a central longitudinal sectional view through the same, Fig. 3 is a top plan view of one end of the tie, the rail securing member being removed, and Fig. 4 is a perspective view of the rail securing member of the tie. Fig. 5 is a sectional view taken in line with the pivot which connects the stem with the rail clamps, and looking upwardly or toward the bottom faces of the clamps.

Referring now to the drawings in detail, the numeral 1 designates a tie. This tie embodies a base flange 2 which is centrally provided with a vertically arranged longitudinally extending web 3 which is integrally formed with an enlarged head 4. The tie, it will thus be noted, resembles in cross section the end of an ordinary railway rail. The web and head of the tie are arranged at a suitable angle near the ends of the said tie, so that the dirt may be tightly tamped between the head and base of the tie

at the ends thereof, and furthermore so that the angular ends 5 will be so engaged by the earth as to prevent the longitudinal movement of the ties. The ties adjacent their transverse ends are formed with web and head enlargements, which may be designated by the numerals 6 and 7 respectively. The enlarged heads and webs have their outer longitudinal faces parallel with each other and in a plane with the longitudinal edges of the base flange of the tie, and the enlarged head is formed with a transversely arranged depressed portion 7' which is of a width approximately equal to the width of the base flange of the rail R and upon which the said base flange is adapted to rest. The enlarged portions 6 at the opposite ends of the tie are further provided with vertically arranged, preferably cylindrical, pockets or depressions 8 which terminate in flanges or shoulders 9 which are disposed a suitable distance from the lower wall of the tie, and each of said shoulders is centrally provided with an opening 10. The depression 8 provides an annular or rounded pocket, and the same terminates in a shoulder 11 which is disposed a suitable distance below the depression 7. Arranged within each of the pockets 8 are a pair of helical springs 12 and 13 respectively, the springs 12 being of a greater size and strength than the springs 13, and the said springs 13 are adapted to be received within the springs 12 and to have their convolutions or coils engage between the convolutions or coils of the spring 12.

The numeral 14 designates the rail clamps for the tie. Each of these clamps include a stem 15 which has an upper centrally reduced portion 16, to which is pivotally secured, as at 17, the cross sectional semi-cylindrical depending stems 18 of the clamp members 14. The portions upon which the stems 18 are formed are flat and disposed each at a right angle to its respective stem. These flat portions 19 receive the base flange of the rail R, and are provided at their outer longitudinal edges with angular portions 19' which engage the upper faces of the base flanges as well as the opposite sides of the rail and have their upper edges lie beneath the heads of the rail. It will be apparent that the stems 18 of the said members may be swung upon their pivots so as to receive the base flanges of the rails R after which the angular portions 19' are

swung over the base flanges of the rails, and the stem 15 is then inserted within the spring 13 and the coils or convolutions of the said spring bearing securely upon the said stem 15 as well as the stems 18 securely and effectively retain the rail clamps upon the ties. The stem 18 is adapted to pass through the reduced central opening in the shoulder provided by the rounded opening 8. It will be also obvious that the spring 13 will be spread by the stems of the clamp or rail-securing members, and will thus have a tendency to force the spring 12 tightly against the wall provided by the rounded opening 8. It will further be noted that the heads or upper portions of the clamping members for the rails will rest upon the upper ends of the springs, it being understood that the springs 12 and 13 extend a suitable distance above the opening 8, and by such an arrangement a desired amount of elasticity is imparted to the rails and the thumping or pounding of the rails, incident to the rolling stock passing thereover is thus effectively overcome, and further that the springs 13 tightly engaging with the stems 18 of the clamps prevent the movement of the clamps in opposite directions away from each other and so force the lips and lip extending portions of the clamps tightly into engagement with the base flanges and webs of the rails.

Having thus described the invention, what I claim is:

1. A metallic tie having its upper portion adjacent its ends provided with a transverse depression forming a seat for a rail, the tie having a shoulder portion arranged below the said seat and being further provided with a depression which is surrounded by the shoulder, expansible elements within the depression and extending above the shoulder, rail clamps, each of said rail clamps including a stem and pivoted headed members provided with integrally formed rail flange-engaging lips, and the stem of the said engaging member as well as the shanks of the head portions of the said members adapted to be received within the compressible members and to have their heads rest upon the said compressible members, substantially as and for the purpose set forth.

2. A metallic tie having its end provided with a reduced portion forming a rail seat, the said rail being formed with an annular

depressed portion disposed below its seat, a pair of helical spring members one engaging the other and one of a greater strength than the other disposed within the annular depression and projecting thereabove, a clamping member for the tie, said clamping member embodying a rounded stem which is provided with an upper reduced portion, rail engaging elements including heads provided with lips and being provided with depending stems which are pivotally connected with the reduced portion of the stem, the said lips and heads adapted to engage with the base flanges of a rail, and the stem of the clamping member as well as the stems of the heads adapted to be received within the inner spring to compress the same against the outer spring and to force the outer spring into engagement with the wall of the annular depression of the tie.

3. The herein described construction of ties and rail clamps associated with the ties, including a tie member having an opening, a recess communicating with the opening and a perforation in the lower wall of the recessed portion of the tie, a clamp embodying a stem passing through the perforation, a stop pin for the stem, said stem having a central reduced extension, a pair of rail clamps each including a headed portion having an angular rail-engaging lip and an extension adapted to contact with the web of the rail when the rail is seated upon the heads of the clamp, the heads of the clamp being provided with downturned stems which have their outer faces rounded, the stems adapted to be arranged upon the opposite sides of the projection of the first mentioned stem, a pivot connecting the clamp stems with the reduced portion of the main stem, a spring surrounding the stems and adapted to exert a tension upon the pivoted stems to force the clamp members toward each other, a second spring of a greater strength arranged within the depression and surrounding the first mentioned spring and bearing between the lower wall of the depression and the heads of the clamp.

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

HARRY R. VENSEL.

Witnesses:

WILLIAM C. McELHORS,
WILLIAM H. MAHAN.