No. 725,373. PATENTED APR. 14, 1903.

C. S. SEITZ.

METALLIC RAILWAY TIE.

APPLICATION FILED NOV. 14, 1902.

NO MODEL.

Fig. 1.

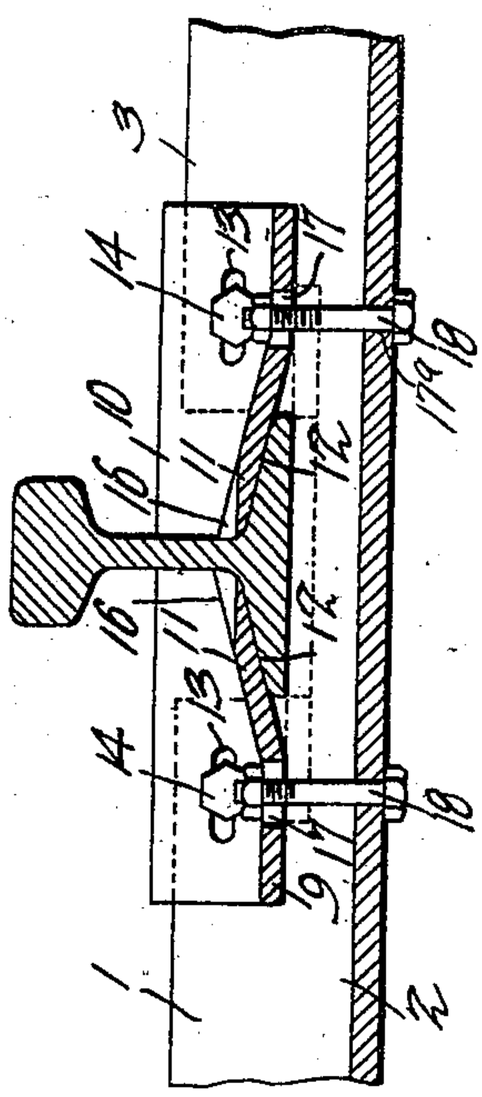

Fig. 2.

Fig. 3.

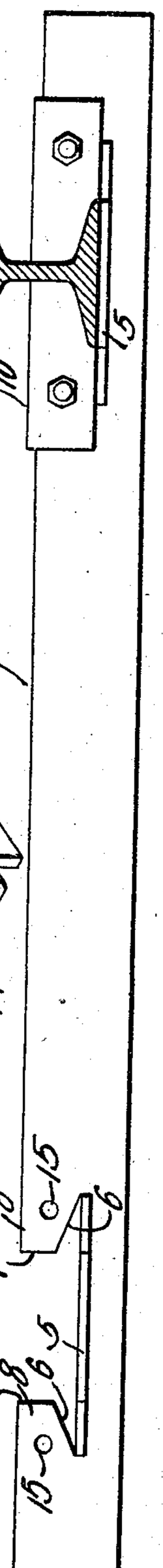

Fig. 5.

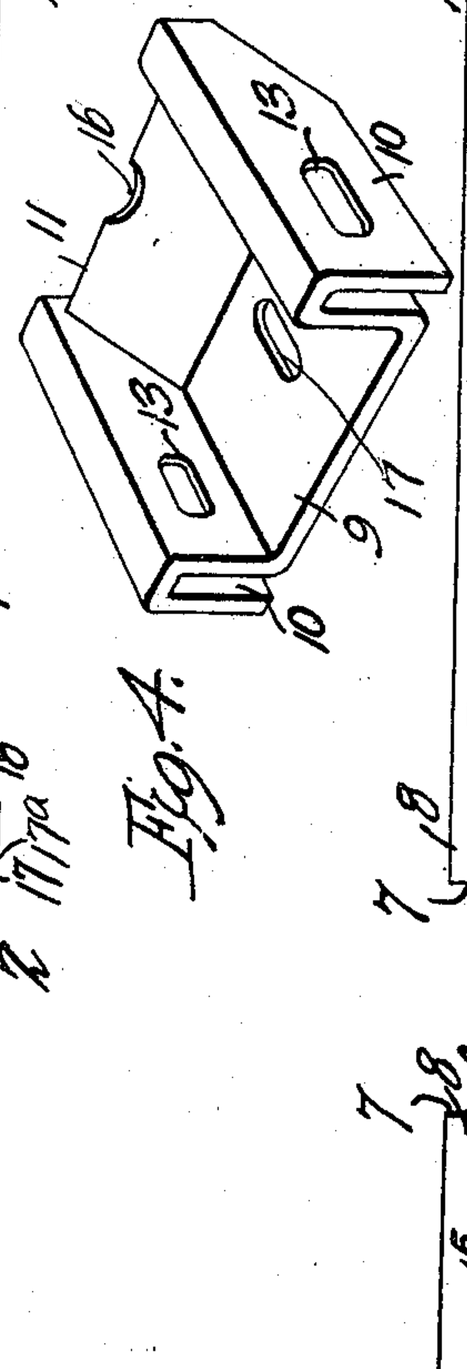

Fig. 4.

Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES S. SEITZ, OF TIFFIN, OHIO.

METALLIC RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 725,373, dated April 14, 1903.

Application filed November 14, 1902. Serial No. 131,405. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. SEITZ, a citizen of the United States, residing at Tiffin, in the county of Seneca and State of Ohio, have invented a new and useful Metallic Railway-Tie, of which the following is a specification.

This invention relates to metallic railway-ties.

The objects of the invention are to adapt the tie for use in connection with a metallic, cement, stone, or an earth foundation and with bridge structures; to effect secure assemblage of the rails with the tie in such manner that they will be prevented from spreading even if broken at the tie; effectively to brace the tie against transverse yielding or collapse and to reinforce it at the rail-seats; to adapt the tie for use in connection with rails having bases of different sizes; to provide for positive adjustment of the rails to different gages; to adapt the tie to receive ballast and also for anchorage to the road-bed, and generally to provide a novel, durable, and thoroughly efficient form of tie.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a metallic railway-tie, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, there are illustrated two forms of the embodiment of the invention, each capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit thereof, and in these drawings—

Figure 1 is a view in perspective of a railway-tie constructed in accordance with the present invention. Fig. 2 is a view in longitudinal section. Fig. 3 is a view in transverse section taken on the line 3 3 of Fig. 1. Fig. 4 is a perspective view of one of the rail-clamps. Fig. 5 is a view in side elevation of a slightly-modified form of tie.

Referring to the drawings, 1 designates generally the tie, which is by preference stamped from a sheet of iron or steel and constitutes a trough-like structure adapted to receive ballast, such as is used in ballasting the road-bed or otherwise, the tie, in effect, forming a part of the road-bed. The bottom of the tie is provided with a longitudinal slot 2, adapted to permit drainage of water therefrom, and also to form a means of interlocking with the road-bed when the same is of cement, thereby to effect the secure anchorage of the tie in position. The sides 3, at points midway of the length of the tie, are cut away on oppositely-disposed angles, as shown at 4, this for the purpose of lightness; but, if preferred, the sides may be of the same height throughout, as shown in Fig. 5. Adjacent to each end of the tie there are provided laterally-projecting seats 5, which are formed by stamping out a portion of the metal of the sides for the purpose, these seats presenting broad and strong bearing-surfaces for the bases of the rails and operating further as stops to prevent the tie from sinking into the road-bed. The recesses formed in the sides by the construction of the seats have oppositely-inclined lower walls 6, corresponding approximately to the pitch of the upper side of the rail-base, and the opposing ends 7 of the abutments 8, formed by the removal of the metal for the seats, constitute stops against which the webs of the rails may bear, if desired, thus in a positive manner preventing spreading, and in the event that a rail becomes fractured or broken at the seat the stops will operate to prevent any lateral movement of the separated sections of the rail. This is a feature of high commercial importance and one that will be found of great value, as it will positively eliminate an element of danger necessarily present with the ordinary wooden tie commonly employed.

The recesses are purposely made considerably longer than the width of the rail-base in order to adapt it to accommodate rails of different sizes and also to permit an extended range of lateral adjustment to adapt the tie for use in connection with roads of different gages. In fact, by this construction of the rail-receiving recesses any rail from the heaviest to the lightest may be employed and be as positively positioned as the heaviest.

The means for locking the rails within the rail-receiving recesses and against the seats comprises a pair of clamps, two for each rail. Each of these clamps is a counterpart of the other, and a description of one will therefore serve for all. The clamp is struck up from suitable sheet metal and comprises a flat bottom 9 and two inverted approximately U-shaped flanges 10, which are adapted to engage with the sides of the tie, said flanges being disposed at right angles to the bottom. The forward portion of the bottom is upwardly inclined at 11 on an angle corresponding to that of the upper side of the rail-base of the rail, and the forward ends of the under sides of the flanges are beveled on an angle corresponding to the base-engaging portion 11 of the clamp, as shown at 12.

As above stated, it is one of the objects of this invention to adapt the rail for lateral adjustment in the tie, thus to adapt it for tracks of different gages, and this is accomplished by providing the flanges 10 with longitudinally-disposed slots 13 to receive bolts 14, that pass through openings 15 in the abutments. It will be seen by this arrangement that by loosening the nuts on the said bolts the clamps may be moved laterally upon the sides of the tie to effect any adjustment required, and in case that it be desired to replace a damaged tie with a new one or to supply a new section of rail this may readily be effected by loosening the bolts and moving the clamps laterally until their opposing ends aline with the ends 7 of the stops, whereupon the rail may be lifted from the tie, as the distance between the opposing ends of the abutments is made of a width greater than the width of the largest rail used. To adapt the clamp for use in connection with a fish-plate, the base-engaging portion 11 thereof will be provided with a recess 16 to straddle the bolt-head or nut, as the case may be.

Where the tie is used on a bridge, provision has been made by which it may be secured in position, and this is effected by providing the bottom 9 of each of the clamps with a longitudinal slot 17 to register with openings 17ª in the bottom of the tie, and through each of these slots and openings is passed a bolt 18, which will be of a length to pass through the bridge-timbers to effect clamping of the tie in position thereon. These bolts 18 are used under all conditions; but where the tie rests upon the ordinary roadbed they will be only of a length to project a sufficient distance above the bottom of the clamp to permit the nut to be screwed thereon.

It will be seen from the foregoing description that the tie of this invention provides for every emergency that will arise in the construction of a railroad, such as the anchoring of a tie in position, its weighting with ballast, its adaptation to receive rails of any sizes, the provision of means for securely clamping the rails in position, and for permitting the adjustment of the rails to suit the gage of the track. Moreover, by making the tie of stamped or drop-forged metal it will with the minimum of material possess the maximum of strength. Further, by having the seats integral with the tie danger of loss is eliminated and a more rigid structure is provided.

When the clamps are bolted to the tie in the manner described, they become, in effect, a part thereof, and thus give added rigidity and strength to the structure as a whole at the points of greatest strain and where the greatest strength is required.

Having thus described the invention, what I claim is—

1. A hollow railway-tie having laterally-projecting rail-base seats and rail-receiving recesses formed by the seats, and clamps adjustably mounted on the sides of the tie and coacting with the seats to secure the rail in place.

2. A hollow railway-tie provided with integral laterally-projecting rail-base seats and rail-receiving recesses formed by the seats and having their under faces disposed at oppositely-inclined angles, clamping devices mounted upon the sides of the tie and having the under faces of their opposed ends inclined at an angle corresponding to that of the upper side of the rail-base, said devices being provided with longitudinal slots, and bolts passing through the slots and through the sides and base of the tie to lock the clamping devices in adjusted position.

3. A railway-tie comprising a stamped hollow structure provided intermediate of its ends with a drain-opening and having a portion of its sides cut away, laterally-projecting rail-base seats disposed at each end of the tie and formed by stamping out sections of the metal of the tie, the removal of the said seats presenting rail-receiving recesses, and rail-clamps adjustably mounted upon the sides of the tie.

4. A railway-tie having laterally-projecting base-seats and rail-receiving recesses formed by the seats, and rail-clamps having hollow flanges to engage the sides of the tie, and means for holding the clamps at any desired adjustment on the sides.

5. A railway-tie having laterally-projecting base-seats and rail-receiving recesses formed by the seats, and rail-clamps having hollow flanges to engage the sides of the tie and an upward-inclined rail-base-engaging member, and means for holding the clamps at any desired adjustment on the sides.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES S. SEITZ.

Witnesses:
J. H. JOCHUM, Jr.,
EARL W. SEITZ.