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COMBINED TRACK GAGE AND RAIL FASTENER.

APPLICATION FILED OCT. 16, 1914.

1,128,668.

Patented Feb. 16, 1915.

Fig. 1

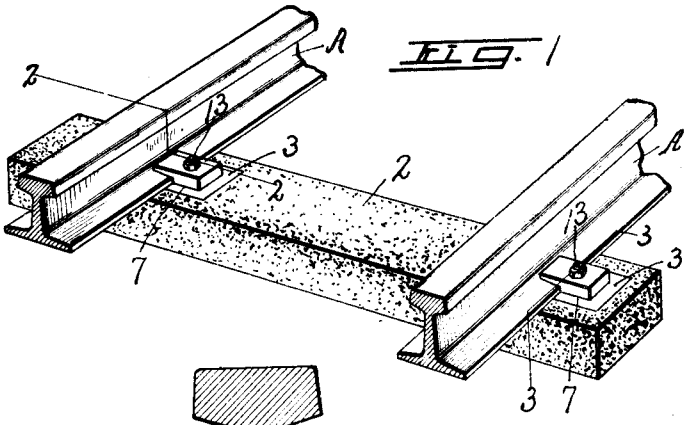


Fig. 2.

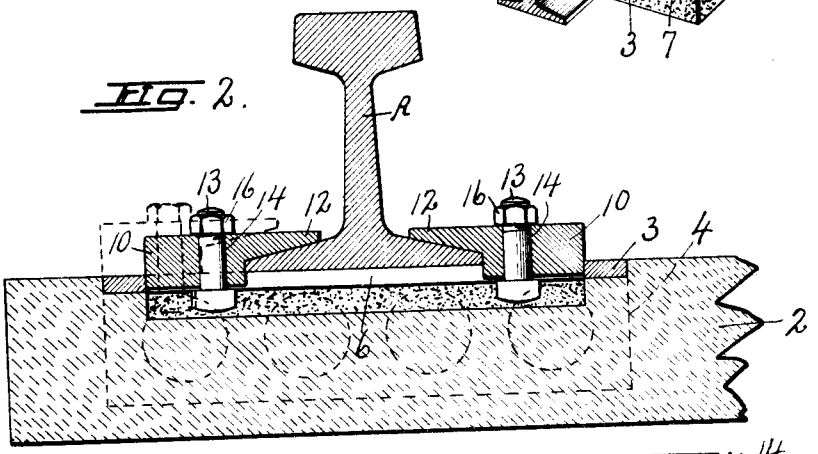


Fig. 3,

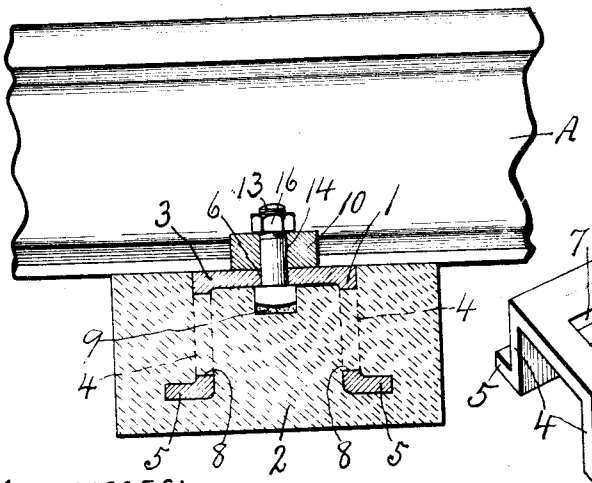


Fig. 5.

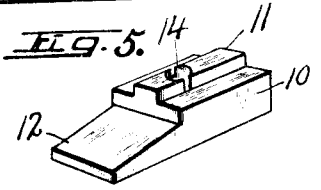
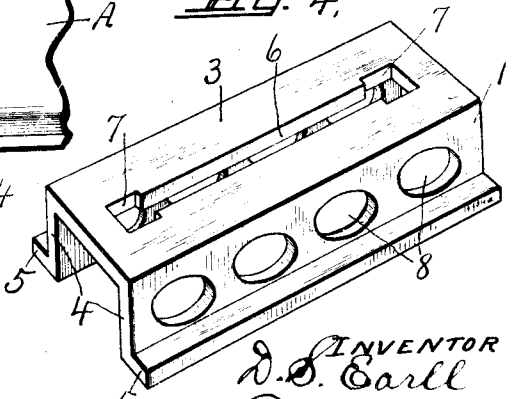


Fig. 4.



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COMBINED TRACK-GAGE AND RAIL-FASTENER.

1,128,668. Specification of Letters Patent. Patented Feb. 16, 1915.

Application filed October 16, 1914. Serial No. 866,916.

To all whom it may concern:

Be it known that I, DAVID S. EARLL, a citizen of the United States, and resident of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Combined Track-Gages and Rail-Fasteners, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to a combined track gage and rail fastener, and involves the use of a concrete tie and slotted plates embedded therein in spaced relation, corresponding to the gage of the track for receiving suitable clamping devices whereby the rails are held the proper distance apart.

The main object is to locate the slotted plates in such relation to each other, that when the rail-clamping members are placed in operative position thereon, they will not only hold the rails to a predetermined gage without the use of special gage implements, but will also reduce the liability of overturning of the rails.

Another object is to construct the rail-clamping blocks in such manner that portions thereof will extend into and substantially fill the portions of the slot at opposite sides of the rail, whereby opposite ends of such portions will abut respectively against the ends of the slot and adjacent edges of the base flanges of the rail, so as to lock said rail against lateral movement without other fastening means.

One of the specific objects is to reduce the time and labor necessary to properly gage and secure the rails of the track to the ties, and at the same time, to permit the fastening means to be as easily and quickly removed when necessary.

Other objects and uses relating to specific parts of the device will be brought out in the following description.

In the drawings Figure 1 is a perspective view of a portion of a track and a concrete tie, equipped with my improved track gage and rail fastener. Fig. 2 is an enlarged transverse sectional view through one of the rails and lengthwise through the adjacent portion of the tie and one of the rail-clamping devices thereon, taken on line 2—2, Fig. 1. Fig. 3 is an enlarged detail sectional view through one of the ties, taken on line 3—3, Fig. 1. Fig. 4 is a perspective view of one of the detached gage plates. Fig. 5 is an inverted perspective view of one of the detached clamping blocks.

In carrying out the objects stated, a pair of inverted U-shape gage plates —1— of pressed steel or equivalent material are embedded in a concrete tie —2— in properly spaced relation, corresponding to the gage of a track, while the concrete is still in a plastic condition during its formation in suitable molds, not necessary to herein illustrate, the upper portion, as —3—, of each plate being substantially flat while the sides, as —4—, are disposed at substantially right angles to the top and provided at their lower edges with outwardly projecting flanges —5—. When these plates are embedded in the concrete, their upper faces are substantially coincident with that of the tie and constitute a part of the bearing upon which the rail rests, the length of each plate being somewhat greater than the combined width of the base of the rail and length of the ribbed portions of the clamping blocks, presently described. The flat top —3— of each plate is provided with a lengthwise slot —6— directly therethrough and terminating at its ends in rectangular enlargements —7— for receiving the heads of suitable clamping bolts, hereinafter described, by which the rail-clamping blocks are held in operative position. The upright sides of each plate are provided with a series of openings —8— above the ribs —5— to permit the concrete to be worked therethrough, so as to unite the bodies within and without the plate, which together with the flanged ribs —5—, embedded in the concrete, securely anchor the plate to the tie against relative movement.

During the formation of the concrete tie —2—, a suitable lengthwise channel —9— is molded in the upper portion thereof, directly under the top —3— of the plate —1—, so as to register with the slot —6— for receiving the heads of the clamping bolts, the channel —9— being coextensive in length with that of the slot —6—, but is slightly wider than said slot to correspond approximately with the width of the heads of the clamping bolts. Each rail is clamped to the tie by means of a pair of clamping blocks —10—, having ribbed portions —11— fitted in and filling portions of the slot —6— at opposite sides of the rail, and flanged portions —12— extending toward each other

from their ribbed portion —11— over and upon the adjacent flanges of the rail, as —A—, the length of each ribbed portion —11— being substantially equal to the distance between the adjacent end of the slot and corresponding edge of the base flange of the rail, so that when the clamping blocks are placed in operative position they serve to hold the rail against lateral movement, independently of any other fastening means, but in order to prevent upward displacement of these clamping blocks or overturning of the rail, said blocks are held in operative position by clamping bolts —13—. These clamping bolts —13— are passed through vertical apertures —14— in the blocks —10— and registering with the slot —6— in the top —3— of the plate —1—, the lower ends of the bolts being provided with square heads —15— of substantially the same form and size as the enlargements —7— at the ends of the slot —6—.

The upper ends of the bolts are threaded and provided with nuts —16— which are always accessible for tightening or loosening. The distance from the centers of the bolts —13— to the outer ends of the clamping blocks —10— is greater than the lengths of the enlarged portion —7— of the slot —6— so that when the clamping blocks are adjusted for use in holding the rail in operative position, the heads of the bolts engage the under sides of the top of the plate at opposite sides of the narrower portion of the slot —6—, the width of said narrower portion being only slightly larger than the diameter of the bolts, so as to allow the latter to slide in the slot. The enlargements —7— are of slightly larger size than the heads of the corresponding bolts —13— to allow said heads to pass therethrough when registered therewith in the operation of placing the clamping blocks in operative position or in removing them.

At the left hand of Fig. 2, I have shown one of the clamping blocks by dotted lines in the position assumed when registering the head of the bolt —13— with the adjacent enlargement —7— of the slot —6—, in which position the lower face of the clamping block rests upon the upper face of the plate —1— and the head of the bolt is free to pass downwardly through the enlargement —7— and below the lower face of the top —3— in registration with the narrower portion of the slot, whereupon the clamping block may be moved toward the rail until its rib —11— drops into the slot —6— and its flange —12— engages the adjacent base flange of the rail, as shown by full lines, after which the clamping bolt may be tightened to firmly lock the block in its holding position, each clamping block being adjusted in the same manner and removed in the reverse manner.

What I claim is:

1. In a combined track gage and rail fastener, the combination with a concrete tie, of inverted U-shape plates embedded in the tie in spaced relation from center to center corresponding to the gage of the track and provided with openings in their sides to permit the concrete to knit therethrough, each plate having its top provided with a central lengthwise slot therethrough, terminating in rectangular enlargements for receiving the heads of clamping bolts, rail-engaging clamps seated in said slots and abutting against the ends thereof, and clamping bolts passed through the clamps and slots and engaged with the under sides of opposite walls of said slots.

2. The combination with a concrete tie and a rail having opposite base flanges, of a rail fastening device comprising a plate embedded in the concrete with its upper side coincident with that of the tie and provided with a slot extending transversely across the under side and to opposite sides of the rail, clamping blocks having ribs entering said slot at opposite sides of the rail and provided with flanges engaging the base flanges of the rail, the length of the slot being substantially equal to the combined lengths of block-ribs and width of the base of the rail to cause the blocks and plate to hold the rail against lateral movement on the tie without other fastening means, and means for holding the blocks against upward movement when adjusted for use.

In witness whereof I have hereunto set my hand this 10th day of October 1914.

DAVID S. EARLL.

Witnesses:
H. E. CHASE,
ALICE M. CANNON.