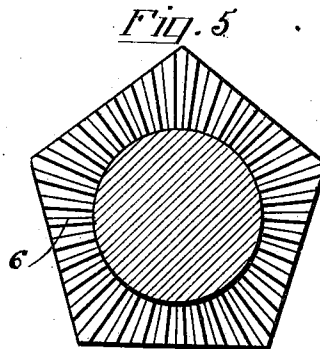
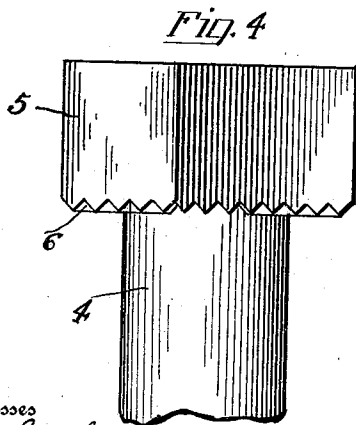
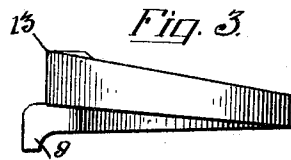
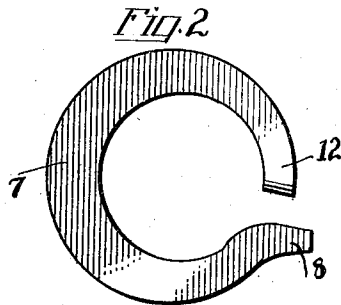
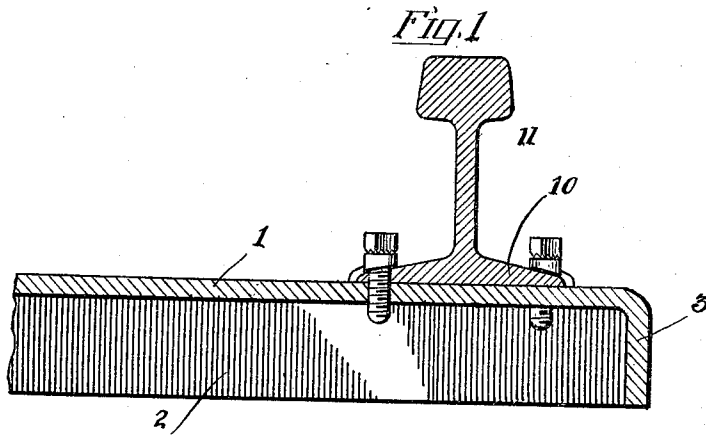


A. M. THREEWITS.
RAILROAD TIE.
APPLICATION FILED JUNE 23, 1909.

983,658.

Patented Feb. 7, 1911.



Witnesses

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UNITED STATES PATENT OFFICE.

ALVIN M. THREEWITS, OF CENTERVILLE, INDIANA.

RAILROAD-TIE.

983,658.

Specification of Letters Patent.

Patented Feb. 7, 1911.

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To all whom it may concern:

Be it known that I, ALVIN M. THREEWITS, a citizen of the United States, residing at Centerville, in the county of Wayne and State of Indiana, have invented new and useful Improvements in Railroad-Ties, of which the following is a specification.

This invention relates to railroad ties, the object in view being to provide a simple, durable and reliable all-metal railroad tie which will afford the necessary cushion for the rails and thereby prevent cutting and wearing the road-bed and rolling stock and also enable such secure connection to be made with the rails as to prevent any possibility of the rails creeping, especially on heavy grades.

A further object of the invention is to provide a tie and connections for the rails combining safety, strength and economy and also securely guarding the same against being tampered with by malicious persons.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts as herein fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a longitudinal section through one end portion of a railroad tie embodying the present invention, showing a rail in cross section fastened thereon. Fig. 2 is a plan view of the spring washer used in connection with the rail fastening device. Fig. 3 is a side elevation of the same. Fig. 4 is a side elevation on an enlarged scale of the head portion of the bolt or screw for fastening the rail to the tie. Fig. 5 is a cross section through the bolt looking upward and showing the serrated or under side of the head.

The tie contemplated in this invention is all-metal and is substantially L-shaped in cross section, said tie comprising a flat top or body portion 1 and a single longitudinal flange 2 extending throughout the length of the tie along one side only thereof and of a suitable depth to become securely embedded in the road bed and ballast. By thus having only a single flange extending along one side of the body of the tie, the introduction of the ballasting material beneath the top or body of the tie is not interfered with thus enabling the tie to be perfectly and

practically utilized before or after it has been connected with the rails.

In order to prevent longitudinal movement of the tie, the latter is also provided with end flanges 3 at both ends thereof, which, when the tie is in place, are firmly embedded in the roadbed and utilized. These end flanges do not interfere in any way with the introduction of the ballast under the top or body 1 of the tie. By the construction described, a firm and reliable anchorage of the tie in the road and ballast is obtained, preventing both longitudinal and transverse movement of the tie.

In order to secure the rail firmly on top of the tie, I employ a suitable number of bolts, or screws each embodying a threaded shank 4 and a head 5 which is serrated on its under side as shown at 6. The head 5 is preferably five-sided as shown in Fig. 5 and the serrations or teeth extend from the bore of the nut outward entirely to the margin or outer edge thereof as shown in Fig. 5.

In connection with each bolt or screw 4, I employ a spring washer 7 which is nearly a complete circle as shown in Fig. 2, said washer having one end extending outward as shown at 8 and downward to form a stop lip 9 which is adapted to engage over the edge of the base flange 10 of the rail as shown in Fig. 1, thus preventing any possibility of the spring washer turning. The other end 12 of the washer is sprung upward as best illustrated in Fig. 3, terminating in a locking angle or corner 13 which is adapted to snap over and engage positively the serrations or teeth 6 on the under side or shoulder of the head 5 of the fastening bolt or screw 4. In practice, the bolts or screws 4 are screwed downward until the washer is compressed flat and firmly between the head of the bolt or screw and the base flange of the rail as clearly shown in Fig. 1 in which final position the lip 9 is securely retained against the margin of the base flange of the rail while the locking angle or corner 13 is in positive engagement with one of the teeth or serrations 6 of the head. This prevents any relative movement between the rail and the tie and prevents possibility of the rail creeping, an especially valuable feature on heavy grades.

I claim:—

1. As an article of manufacture, a railway tie composed of a single blank of spring

sheet steel bent into substantially L-shape in cross section comprising a flat top or body portion, a downwardly bent flange extending along one side only thereof and at
5 a right angle to the top and downwardly bent end flanges coextensive in height with the aforesaid side flange and at right angles to the top of the tie, the tie as a whole forming a resilient support or cushion for the
10 rails, substantially as described.

2. The combination with an all-metal railroad tie embodying a flat top or body, and a depending flange extending along one of the longitudinal edges thereof, of a rail
15 resting on said body, fastening devices ar-

ranged at opposite sides of the rail and screwing into threaded openings in the top of the tie, said devices being provided with serrated shoulders, and spring washers interposed between the heads of the devices and
20 the base flanges of the rail and adapted to interlock with the rail flanges and the fastening devices.

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

ALVIN M. THREEWITS.

Witnesses:

E. D. SHENDLER,
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