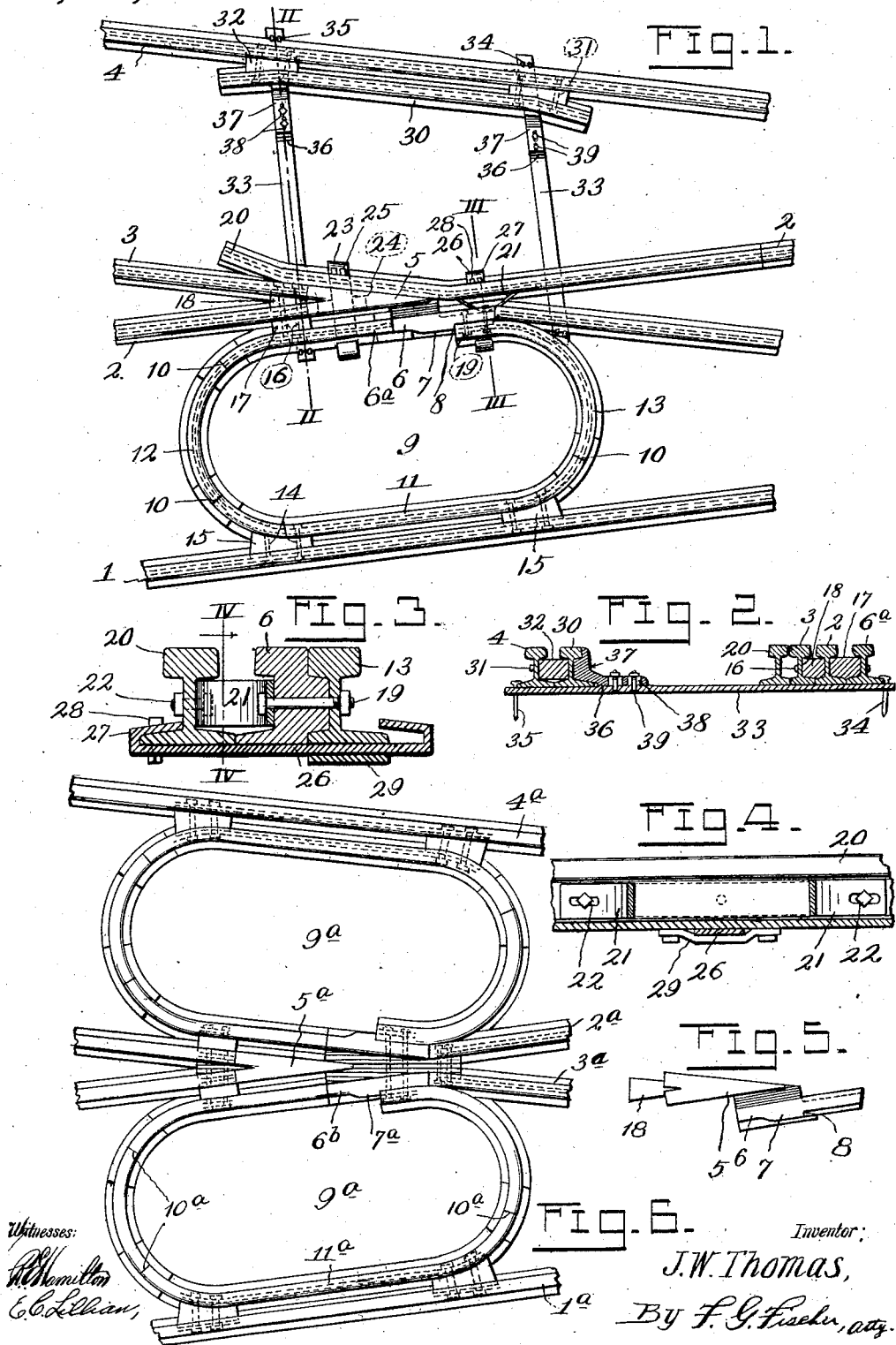


J. W. THOMAS.
 SPRING FROG AND GUARD RAIL.
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UNITED STATES PATENT OFFICE.

JOHN W. THOMAS, OF GUTHRIE, OKLAHOMA, ASSIGNOR OF ONE-THIRD TO JOHN R. HAMILL, ONE-SIXTH TO FRED W. GREEN, AND ONE-FOURTH TO CHARLES G. HORNOR, ALL OF GUTHRIE, OKLAHOMA.

SPRING-FROG AND GUARD-RAIL.

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Specification of Letters Patent.

Patented Dec. 24, 1912.

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To all whom it may concern:

Be it known that I, JOHN W. THOMAS, a citizen of the United States, residing at Guthrie, in the county of Logan and State of Oklahoma, have invented certain new and useful Improvements in Spring-Frogs and Guard-Rails, of which the following is a specification.

My invention relates to a combined spring-frog and guard-rail, and my objects are to provide novel means for retaining the guard-rail a certain distance from the point of the frog, means to limit lateral movement of the spring-rail of the frog, and resilient means to normally hold said spring-rail in closed position.

Other objects of the invention will herein-after appear, and in order that said invention may be fully understood, reference will now be made to the accompanying drawing, in which:

Figure 1 is a plan view of the preferred form of my invention. Fig. 2 is a cross section on line II—II of Fig. 1. Fig. 3 is a cross section on line III—III of Fig. 1. Fig. 4 is a section on line IV—IV of Fig. 3. Fig. 5 is a detail plan view of the frog-point and part of a wing-rail employed in carrying out the invention. Fig. 6 is a plan view of a modified form of the invention.

1 and 2 designate main-line rails, and 3 and 4 designate branch-line rails of the frog.

5 designates the frog-point which is preferably formed integral with a section 6 of the wing-rail, said section 6 having a reinforcement 7, provided with a shoulder 8, against one end of which a guard-rail 9 abuts. The wing-rail consists of section 6 and a section 6^a, for a purpose which will hereinafter appear.

Guard-rail 9, preferably, has a number of joints 10, so that it may be easily formed and put together, and comprises an intermediate section 11, paralleling rail 1, and curved end sections 12 and 13. Section 12 abuts against one end of the wing-rail section 6^a, and section 13 abuts against the shoulder 8 on the wing-rail section 6, see Fig. 1. Section 11 of the guard-rail 9 is secured to the main-line rail 1 with bolts 14, which extend through fillers 15 between said rails. Section 6^a of the wing-rail is suitably-secured at one end to section 6 and near its opposite end to the main-line rail 2, by bolts

16 extending therethrough and also through the branch-line rail 3.

17 designates a filler between the main-line rail 2 and section 6^a, and 18 designates a filler integral with the frog-point 5 and interposed between the main-line rail 2 and the branch-line rail 3.

19 designates a plurality of bolts to secure one end of section 13 to the adjacent end of the wing-rail section 6.

20 designates a spring-rail, one end of which abuts against one of the main-line rails 2, while its opposite portion normally bears against one side of the frog-point 5, where it is held by its own resilience and a spring 21 having pin-and-slot connections at its ends with the rail 20, and secured at its central portion to the wing-rail by one of the bolts 19. The frog-point 5 is prevented from springing upward above the surface of the adjacent rails by a retaining-plate 23 and a supporting-member 24. Retaining-plate 23 is secured to the spring-rail base by bolts 25, and extends beneath said spring-rail, the frog-point 5, and the wing-rail. The supporting-member 24 is suitably-secured to the underside of the frog-point 5. The flanges on the wheels of a car passing in either direction over the branch-line will force the spring-rail 20 away from the frog-point 5 to permit said flanges to pass, and this lateral movement of the spring-rail 20 is limited by a member 26 extending beneath section 13 of the guard-rail 9, the wing-rail, and the spring-rail 20, and having one end bent upward and overlapping the base of section 13, and its opposite end 27 bent upward to overlap the base of the spring-rail 20 to which it is secured by bolts 28, (Fig. 3). Sufficient distance is left between section 13 and the overlapping end of member 26 to allow for the lateral movement of spring-rail 20 necessary to let the flanges pass. When the flanges of the car-wheels pass out of engagement with the spring-rail 20, the same is restored to normal position through its own resilience and that of spring 21. Member 26 is held in proper relation to the base of section 13 by means of a supporting-member 29, suitably-secured to the underside of said base.

30 designates a guard-rail adjacent the branch-line rail 4, to which it is secured by bolts 31, extending therethrough; fillers 32

being interposed between said rails to coact with the bolts 31 in holding said rails in proper relation to each other. The branch-line rail 4 and the guard-rail 30 are held in proper relation to the branch-line rail 3 and the frog-point 5, by a pair of spacing-members 33, one of which is secured at its ends to the branch-line rails 3 and 4 by spikes 34, while the other is secured at its ends to the branch-line rail 4 and section 12 of the guard-rail 9 by spikes 35. The upper surface of the spacing-members 33 have serrations 36 adjacent the guard-rail 30 to receive the serrated lower ends of a pair of braces 37, which abut against said guard-rail 30 and prevents the same from moving toward the branch-line rail 3 and the frog-point 5. Rail braces 37 have longitudinal slots 38 through which bolts 39 extend, to secure said rail braces to the spacing-members 33, the slots permitting adjustment of the braces into engagement with the guard-rail 30. The interlocking serrations on the spacing-members 36 and the braces 37 prevent movement of the latter on the former after the bolts 39 have been tightened.

By reinforcing the wing-rail section 6 at a point opposite the frog-point 5, the upper surface of said frog-point is relieved, to a large extent of wear by the broad surface offered by said wing-rail section and its reinforcement 7. By forming the frog-point 5 and the wing-rail section 6 integral with each other, and separate from the adjacent rails, said frog-point and wing-rail section may be made of manganese steel or other metal that is harder than that usually employed for the other rails, and consequently the life of said frog-point 5 and the wing-rail section 6 may be greatly prolonged. This is also true of the guard-rail section 11.

In the modified form disclosed by Fig. 6, the spring-rail 20 is dispensed with and a guard-rail substituted therefor. Referring

in detail to said modified form 1^a and 2^a designate main-line rails, and 3^a and 4^a designate branch-line rails. 5^a designates a frog-point arranged at the intersection of rails 2^a and 3^a. Frog-point 5^a is, preferably, formed integral with sections 6^b of the guard-rails 9^a, which sections are reinforced at 7^a to protect the frog-point 5^a from undue wear. The frog-point 5^a and the sections 6^b are formed, preferably, of manganese steel to prolong the life thereof. Guard-rails 9^a have a plurality of joints 10^a to facilitate their manufacture and placing in position for use, and their sections 11^a are, preferably, made of manganese steel.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:

1. In a device of the character described, in combination, a frog-point, and a wing-rail consisting of a plurality of sections, one of said sections paralleling one side of and formed integral with the frog-point, and having a reinforcement opposite the reduced end of said frog-point for the purpose described.

2. In a device of the character described, in combination, a frog-point, a spring-rail at one side of said frog-point, a wing-rail cast integral with the opposite side of the frog-point and having a reinforcement with a shoulder, main-line rails communicating with the frog-point and the spring-rail, and a guard-rail having a portion paralleling one of the main-line rails and curved terminals, one of which abuts against one end of the wing-rail and the other against the shoulder at the opposite end of said wing-rail.

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

JOHN W. THOMAS.

Witnesses:

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