

UNITED STATES PATENT OFFICE.

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RAILWAY-CROSSING.

No. 870,173.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ARTHUR HOSMER, a citizen of the United States, residing at Fort Worth, in the county of Tarrant and State of Texas, have invented certain new and useful Improvements in Railway-Crossings, of which the following is a specification.

This invention relates to an improvement in railway crossings, and more particularly to that type of crossings employing hard metal frogs at the corners thereof.

10 The object of the present invention is the provision of a crossing of this character, which is so fastened that the rails will not be subjected to excessive wear from the hammer blows of the wheels in passing thereover.

15 A further object of the invention is the provision of a crossing of this character which when assembled will present a strong rigid structure, and the several parts of which may be readily removed and replaced when worn, without dismembering the entire structure.

20 A further object of the invention is the provision of an improved hard metal frog or center plate for the corners of the crossing.

25 Other objects of the invention will be apparent from the detailed description hereinafter, when read in connection with the accompanying drawings forming a part hereof, wherein a preferable embodiment of my invention is shown, and wherein like numerals of reference refer to similar parts in the several views.

30 In the drawings, Figure 1 is a plan view of my improved railway crossing, Fig. 2 is a cross section on line 2—2 of Fig. 1, Fig. 3 is a cross section on line 3—3 of Fig. 1, and Fig. 4 is a cross section of a modified form of frog or center plate for the corners of the crossing.

Referring now more particularly to the drawings, A designates the frogs or center pieces, which are secured at the four corners of the crossings. Each of the frogs or center pieces comprises a flat base plate A', which is designed to be seated in a suitable seat in the upper face of the tie, so that the top thereof will lie flat with the top of the tie, and a portion A² of approximately parallelogram form extending upwardly from the central portion of said base plate. The side walls of the rectangular portion of the several frogs or center pieces A are provided at their juncture with the base plates A' of said frog with inwardly extending recesses a, which are designed to receive the flanges of the rails, which are positioned adjacent thereto, when the parts of the crossing are assembled and along their upper edges with recessed portions a', which are designed to receive the heads of said rails. The tops of the frogs or center plates are flat and are provided with crossed grooves extending from the corners thereof, which are designed to receive the flanges of the wheels in passing thereover.

55 B designates rail members, one arm of each of which is in alinement with and forms a part of the running

rails of one of the tracks of the crossing and the other arm of which is bent at an angle to form a part of the running rails of the other track of the crossing. The rail members B are each formed by bending a straight rail twice intermediate the ends thereof so as to form an angular portion b at the corner thereof, when the sections of the crossing are assembled. The angular portions b of the rail members B rest upon the bases of the frogs A, and lie along side the outer side walls of the rectangular portions thereof, the flanges and portions of the heads of said angular portions adjacent the rectangular portions of the frogs engaging the recessed portions a and a' thereof, so that the tops of said rails will lie flush with and form a substantial continuation of the tops of said frogs.

70 C designates four substantially U-shaped members formed of track metal, which are designed to be secured between the running rails B of the two tracks of the crossing, the arms C' of which constitute the guard rails for said running rails, and the bases C² of which constitute the inner running rails of the crossing. The arms C' of the members C are connected to the bases thereof by angular portions c, which are designed to rest upon the bases of the frogs, and to lie along side the side walls of the rectangular portions when the parts of the crossing are assembled. The inner guard rails of the crossing are formed by four members D, the arms of which extend at an angle to each other, and which are connected by angular portions d which are designed to rest upon the bases of the frogs and to lie along side of one of the side walls of the rectangular portions A' of the frogs A. The adjacent ends of the arms of the members D are beveled, as at d' so that in the event of excessive wear or injury, one of said members may be removed and replaced without disturbing the others. The flanges and portions of the heads of the angular portions c and d of the members C and D adjacent the rectangular portions of the frogs engage the recessed portions a and a' thereof, so that the tops of all of the rail members secured adjacent the frogs lie flush with and form a substantial continuation thereof.

95 E designates angular brace members which are secured within the corners of the rail members B. The brace members E are preferably in the form of rails, the tops of the heads of which extend flush with the tops of the running rails B, so that the edges of said running rails will not be subjected to excessive wear from the hammering of the wheels in passing over the crossing.

100 F designates U-shaped brace members, formed of bent rails, which are secured within the U-shaped members C, the arms of said members serving to brace the guard rails C' and the bases of said members serving to protect the edges of the inner running rails C² from excessive wear by reason of the hammering of the wheels in passing thereover.

Suitable filling blocks are interposed between the several running rails of the crossing and their guard rails, in the usual manner, and between the brace members and the rails to which they are secured. The several sections of the crossings are assembled by suitable bolts which pass through the arms of the adjacent rail brace members, and it will be noted that owing to the particular construction of the members constituting the crossing, none of the parts thereof are connected by any fastening means to the frogs or center pieces.

The frogs or center pieces A are formed of cast steel, but where the crossing is located at a point where there is unusually heavy traffic, it is sometimes desirable to utilize frogs of exceptionally hard material, and for this purpose I have provided the modified form of frog illustrated in Fig. 4 of the drawing. In this form the frog is provided with a top A³, which is formed of tool steel, which is united to the steel body of the frog by casting. To perfect the union of the hardened tops A³ with the steel bodies of said frogs, said tops may be provided with projections A⁴, around which the body of the frog is cast. From the above-described construction it will be seen that in as much as all of the rails adjacent the frogs or center pieces of the casting are supported upon the bases thereof, a crossing is provided which is strong and durable and the parts of which will not readily become loose, and that in as much as the tops of all of the rails adjacent the frogs or center pieces extend flush therewith, and form a substantial continuation thereof, said rails are protected from excessive wear from the hammering of the wheel.

While in the crossing illustrated in the drawing, I have shown tracks thereof extending at right angles to each other, it will be obvious that my invention is equally applicable to crossings in which the tracks cross at other angles, it being simply necessary in each instance to provide corner pieces, the rectangular portions of which are of such dimensions that the grooves connecting the corners thereof will cross at the proper angle, and form the several rail members which go to make up the crossing with the arm extending at the proper angle.

Claims.

1. In a railway crossing, oppositely disposed angular rail members, the diverging arms of which form parts of the running rails of the several tracks of the crossing, and a substantially U-shaped rail member secured between the adjacent arms of said rail members with its base in alinement with the other arms of said rail members.

2. In a railway crossing, an integral frog or center piece comprising a base and a rectangular portion extending upwardly therefrom, and a rail member provided with a portion supported upon the base of said frog and lying along side of one side of the rectangular portion thereof and with a bent portion in alinement with one of the tracks of said crossing.

3. In a railway crossing, a frog or center piece, and a rail member comprising an intermediate portion lying along side of said frog and end portions extending at an angle from said intermediate portion and forming parts of the tracks of said crossing.

4. In a railway crossing, a frog or center piece having crossed grooves in the top extending transversely thereof, and a rail member comprising an intermediate portion lying along side of one side of said frog and end portions extending at an angle from said intermediate portion and in alinement with the grooves in the top of the frog.

5. In a railway crossing, a frog comprising a base and a portion positioned centrally thereof, and a rail member comprising an intermediate portion supported upon said

base adjacent one side of the portion of the frog and end portions extending at an angle from said intermediate portion and in alinement with the tracks of the crossing.

6. In a railway crossing, a frog or center piece, a rail member comprising an intermediate portion lying along side of said frog and end portions extending at an angle from said intermediate portion and forming parts of the tracks of said crossing, and an angular brace secured in the corner of said rail member.

7. In a railway crossing, a corner piece, a plurality of rail members extending from said corner piece and forming parts of the rails and guard rails of both lines of said crossing, said rail members having bent portions engaging said center piece.

8. In a railway crossing, a frog comprising a base and a portion arranged centrally thereof, and a rail member having a portion forming a part of one of the tracks of said crossing and a bent portion supported upon the base of said frog, the side of the central portion of said frog being provided with recessed portions adapted to receive the adjacent portions of the head and flange of said rail member.

9. In a railroad crossing, track running rails, crossing running rails in alinement with said track running rails, and guard rails for the running rails of the crossing, said guard rails comprising four angular rail members having their abutting ends beveled.

10. In a railway crossing, a pair of frogs or center pieces each comprising a base and a portion of approximately parallelogram form arranged centrally thereof, rail members forming parts of the tracks of said crossing and provided with bent portions supported upon the bases of the frogs and along side the parallelogram portions thereof, and a U-shaped rail member secured between said first-mentioned rail members.

11. In a railway crossing, a pair of frogs or center pieces each comprising a base and a portion arranged centrally thereof, a pair of rail members each comprising an intermediate portion supported upon the base of one of said frogs and end portions extending at an angle from said intermediate portion and in alinement with the tracks of the crossing, and a U-shaped member secured between the adjacent arms of said rail members.

12. In a railway crossing, a frog or center piece comprising a base and an upwardly extending portion arranged centrally thereof, a pair of rail members each comprising an intermediate portion supported upon the base of one of the frogs and lying alongside the upwardly extending portion thereof and end portions extending at an angle from said intermediate portion and constituting arms in alinement with the tracks of the crossing, and fastening means connecting the adjacent arms of said rail members.

13. In a railway crossing, a frog or center piece comprising a base and a rectangular portion arranged centrally thereof, angular rail members supported upon the base of said frog and provided at the corners thereof with portions engaging the side walls of the rectangular portion of the frog, said side walls being provided with recessed portions to receive the heads and flanges of the adjacent rails, and fastening means connecting the adjacent arms of said rail members.

14. In a railway crossing, four angular rail members, the diverging arms of which form part of the running rails of the several tracks of the crossing, substantially U-shaped rail members connecting the adjacent arms of said angular rail members and guard rails arranged adjacent the bases of said U-shaped members.

15. In a railway crossing, corner pieces at the corner of the crossing, each of said corner pieces being embraced by the running rails and guard rails of both lines.

16. A railway crossing having four rectangular equidistant center pieces of uniform dimensions provided with flange ways extending from the corners thereof.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR HOSMER.

Witnesses:

WM. A. CATHEY,

M. HEAFER.