

Oct. 7, 1930.

E. J. SEXTON

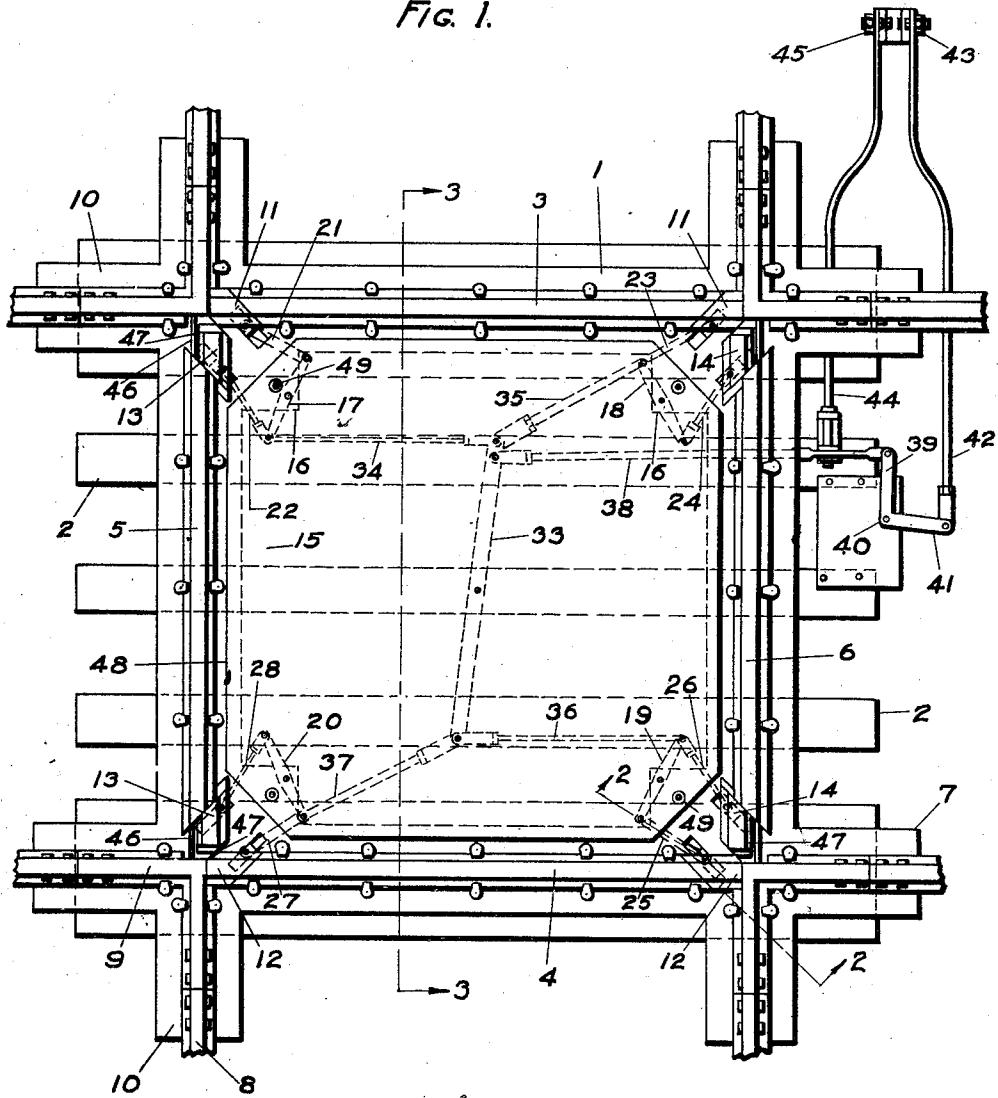
1,777,505

RAILROAD CROSSING

Filed March 31, 1930

2 Sheets-Sheet 1

FIG. 1.



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2 Sheets-Sheet 2

FIG. 2.

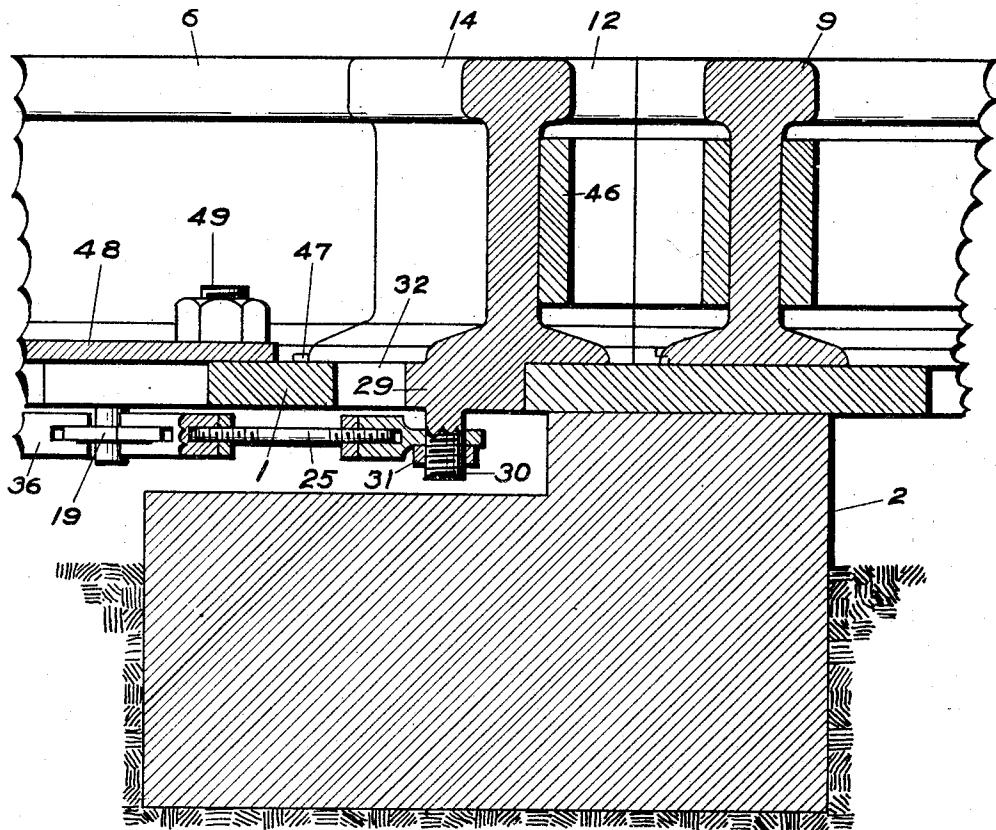


FIG. 3

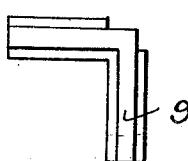
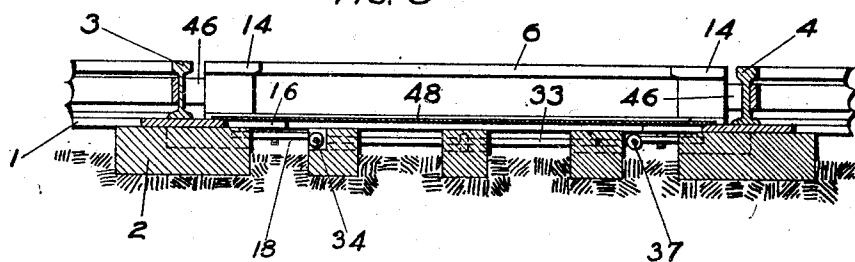


FIG. 4.

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UNITED STATES PATENT OFFICE

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RAILROAD CROSSING

Application filed March 31, 1930. Serial No. 440,251.

This invention relates to railroad crossings and one feature of the invention is the provision of means for providing a continuous rail surface in either direction for the passage of trains.

A further feature of the invention is the provision of a supporting member so arranged that ties and ballast may be introduced or removed at points beneath the supporting member.

A further feature of the invention is in so constructing and arranging the various operating parts of the device that they will be practically excluded from view and more or less protected from the elements.

A further feature of the invention is the provision of a stop for limiting the movement of the movable parts of the rails in one direction and at the same time add reinforcement thereto and brace the movable sections of the rails.

A further feature of the invention is the provision of means on the movable parts of the rails for interlocking with the stationary rails for preventing side sway of said movable parts.

A further feature of the invention is the provision of means for controlling the movable rails by imparting a direct thrust or pull thereon.

Other objects and advantages will be hereinafter more fully set forth and pointed out in the accompanying specification.

In the accompanying drawings which are made a part of this application,

Figure 1 is a top plan view of the crossing with one trackway closed for the passage of a train and the other trackway open.

Figure 2 is an enlarged detail sectional view as seen along line 2-2, Fig. 1.

Figure 3 is a sectional view as seen along line 3-3, Fig. 1.

Figure 4 is a detail top plan view of a frog used for uniting the track rails.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, the numeral 1 indicates a supporting base, preferably constructed of metal, said base being mounted on the usual form of ties 2 and con-

nected thereto in any suitable manner, or any other suitable support may be provided.

Attached to the base 1 are sections or rails 3 and 4 and 5 and 6, arranged in pairs, the sections 3 and 4 forming a continuation of 55 a trackway 7, while the sections 5 and 6 form a continuation of a trackway 8, said trackways crossing each other at an angle.

The ends of the rails forming the trackways 7 and 8 are connected by means of substantially triangular shaped frogs 9, the outer ends of which rest upon extensions 10, projecting from the supporting base 1, the ends of the track-forming rails also resting on said extensions. The ends of the rail sections 3 and 4 and 5 and 6, terminate short of the frogs 9 to form spaces for movable rail sections 11 and 12 and 13 and 14, said movable sections being likewise arranged in pairs for cooperation with the pairs of rail sections 3 and 4 and 5 and 6, respectively.

The members 11, 12, and 13, 14 are moved into or out of registration with the respective rail sections 3, 4 and 5, 6 to form continuous rail surfaces between the respective rail sections and the trackways, the members 11 and 12 being shown in alignment with the rail sections 3 and 4, respectively, thus forming a continuous rail surface for the trackway 7, while the members 13 and 14 are shown out of alignment with the sections 5 and 6, respectively.

The base 1 is provided with an opening 15, so that repairs may be readily made between the several rails supported by the base, such as replacing ties, adding or removing ballast, or such other work as is necessary to the upkeep of the roadway. At each corner of the opening 15, ledges 16 are formed, preferably integral with the base 1, to the under faces of which are pivoted rocker rams 17, 18, 19 and 20. The rocker arm 17 has pitmen 21 and 22 attached to the ends thereof with their opposite ends attached respectively to one of the movable sections 11 and 13. The rocker arm 18 has pitmen 23 and 24 attached to its ends, which connect with one of the movable members 11 and 14.

The rocker arm 19 has pitmen 25 and 26 attached thereto, which cooperate with one 100

of the movable members 12 and 14, respectively, while the rocker arm 20 has pitmen 27 and 28 attached thereto, which cooperate with one of the movable members 12 and 13, respectively.

6 Each of the movable members 11, 12, 13 and 14 has a downwardly extending block-like member 29, from each of which extends a threaded stud 30 for the reception of the ends 10 of the respective pitmen, nuts 31 or the like being threaded onto the studs for holding the pitmen in engagement with the studs. The block-like members 29 extend downwardly through elongated slots 32 formed 15 through the base member 1 and extend in line with the movement of the movable members to which the blocks are attached, said blocks serving to brace as well as guide the movable members.

20 Pivoted substantially at the axial center of the opening 15 is a shackle bar 33, to the ends of which are pivotally attached thrust rods 34, 35 and 36, 37, the rod 34 pivotally connecting with that end of the rocker arm 17 25 to which the pitman 22 is attached and the rod 35 with that end of the rocker arm 18 to which the pitman 23 is pivoted. The rod 36 at the opposite end of the shackle bar 33, is pivoted to that end of the rocker arm 19 to 30 which the pitman 26 is connected, while the rod 37 is attached to that end of the rocker arm 20 to which the pitman 27 is pivotally attached. By this arrangement, four of the 35 movable rail sections will be simultaneously moved into alignment with the rails of one of the trackways while the other four of the movable rail sections will be moved out of alignment with the rails of their respective trackway.

40 The shackle bar 33 is swung back and forth by means of a thrust rod 38, which extends substantially at right angles to the longitudinal trend of the shackle bar, the outer end thereof being attached to one arm 39 of a bell-crank lever 40, while to the opposite arm 41 45 of the lever 40 is attached an operating member 42, which is in turn pivoted to an operating lever 43, in this instance shown as located in proximity to the crossing, although it 50 will be understood that the operating lever may be positioned at any suitable distance from the crossing and located in the usual tower or other suitable housing (not shown) if desired. Associated with the thrust rod 55 55 is a locking rod 44, the inner end of which engages the thrust rod 38 and holds various movable elements of the crossing locked in their various adjusted positions, the opposite end of the locking rod 44 being connected 60 with an operating lever 45, which is preferably positioned in proximity to the lever 43, so that said levers may be operated in unison.

In order to limit the movement of the various movable rail sections as they are moved 65 into alignment with the stationary rail sec-

tions 3, 4, 5 and 6 and the frogs 9 a plate or bar 46 is extended from each end of the respective stationary rail sections to the adjacent frog, said bars contacting with the webs of the movable rail sections as they are moved into alignment with the respective trackways. These bars not only limit the movement of the rail sections but also serve to brace the same against lateral movement when a train passes thereover and in addition to the bars serving to add rigidity to the movable rail sections, each of them is provided with flanges 47 which pass beneath the adjacent portions of the stationary rail sections and frogs, when the movable sections are aligned therewith.

In order to protect the operating parts of the crossing, a plate 48 is extended over the opening 15 and rests on the edges of the supporting base 1 and is removably secured thereto in any suitable manner, as by means of bolts or the like 49, and by forming the plate of such a size that the edges thereof will overlap the edges of the base 1, the various parts therebeneath will be fully protected from the elements. It will likewise be seen that by bolting the plate in position, it may be easily removed when desired.

As shown in the drawing, the trackway 7 is set for a train to pass thereover and in order to set the parts of the crossing for the passage 95 of a train on trackway 8, the locking rod 44 is released from the thrust rod 38 and the lever 43 then operated to rock the bell-crank lever 40 and direct a thrust against the rod 38. This action will swing the shackle bar 33 on its pivot for direction thrusts against the thrust rods 34 and 36 and a pull against the thrust rods 35 and 37, thus rocking the rocker arm 17 for aligning the movable rail section 13 with the stationary rail section 5 and remove one of the sections 11 from alignment with the rail section 3; operating the rocker arm 18 for aligning the section 14 with the rail section 6 and removing the other section 11 from alignment with the section 3; 105 operating the rocker arm 19 for aligning the other movable rail section 14 with the rail section 6 and removing one of the sections 12 from alignment with the rail section 4; and operating the rocker arm 20 for aligning the other movable section 13 with the rail section 5 and moving the other movable section 12 out of alignment with the section 4, thus closing the trackway 8 for the passage of a train and opening the trackway 7. As soon as the 110 parts of the crossing have been properly set, the locking rod 44 is again returned into engagement with the thrust rod 38 for again locking the parts of the device against operation.

While the description and drawings illustrate in a general way certain instrumentalities which may be employed in carrying the invention into effect, it is evident that many modifications may be made in the various de- 115

tails without departing from the scope of the appended claims, it being understood that the invention is not restricted to the particular examples herein described.

5 What I claim is:

1. In a railroad crossing structure, a one piece base member having an opening therethrough, extensions projecting outwardly from the corners thereof and ledges extending inwardly at the corners thereof the ends of the adjacent rails of the crossing track rails resting on said extensions, substantially tri-angular shaped frogs, one at each corner of said base, means for connecting the rails 15 of the crossing trackways to the outer ends of said frogs, one rail of one track way being attached to one extremity of the frog and the adjacent rail of the other crossing track way to the other extremity of the same frog, rails 20 mounted on said base and forming continuations of the crossing track ways and of less length than the width of the crossing track ways to form spaces at the ends thereof, independently operated movable rail sections 25 mounted on said ledges, said sections being arranged in pairs, blocks integral with and extending downwardly from said movable sections, said ledges having slots through which said blocks extend, rocker arms pivoted 30 to the under faces of said ledges, means for connecting said rocker arms with said blocks, and means for operating said rocker arms whereby one movable rail section of each pair will be moved outwardly into one of the 35 spaces at the ends of the continuation forming rails and the other of the same pair inwardly away from its respective space.

2. In a railroad crossing structure, a base member having an opening therethrough, extensions projecting outwardly from the corners thereof and ledges extending inwardly therefrom, the ends of the trackway forming rails resting on said extensions, substantially tri-angular shaped frogs at the corners 45 of said base to which the rails of the trackways are attached, rails mounted on said base of a length less than the width of the trackways to provide spaces between the ends of the latter rails and the apex of the adjacent 50 frog, movable rail sections mounted on said ledges and adapted to be moved into or out of alinement with the latter rails and the frogs to span or open the spaces between the latter 55 rails and the frogs, said movable sections being formed in independently movable pairs, all of which move inwardly when moved out of alinement with their respective parts and moving in a radial line with the axis of the 60 opening in said base member, said ledges having alining slots therethrough, blocks depending from said movable sections and through said slots, a rocker arm for each pair of movable sections pivoted to the under face of the 65 associated ledge and transversely of the path of said pairs of movable sections, a pitman

extending from each end of said rocker arm and connected with its respective movable section at a point beneath the associated ledge, and means pivotally mounted in said opening for operating said movable sections 70 for moving them into or out of alinement with the rail sections proper.

In testimony whereof, I have hereunto set my hand on this the 26th day of March, 1930.

EDWARD J. SEXTON.

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