Sept. 30, 1958 R. C. JOHNSON 2,854,194

RAILROAD GRADE CROSSING

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Fig. 1

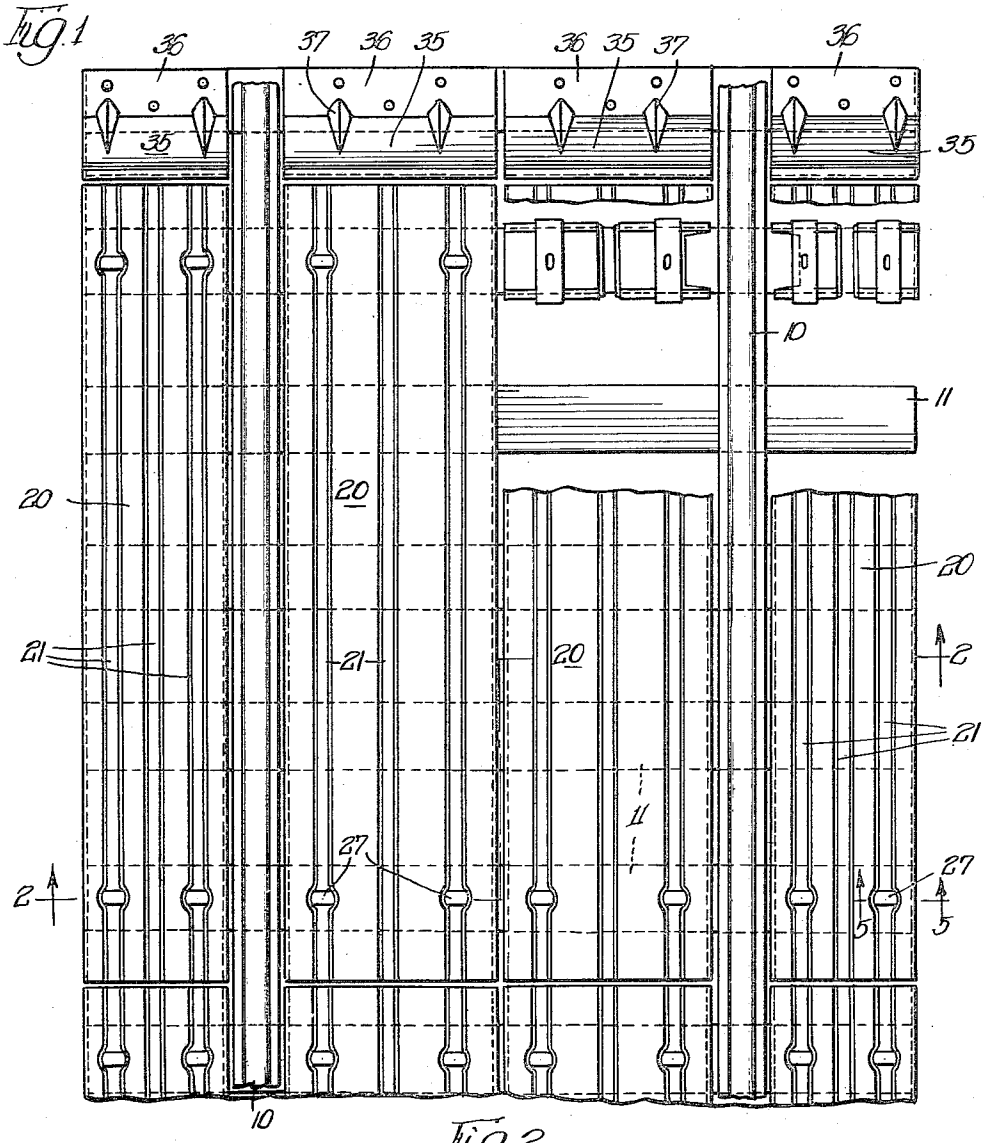
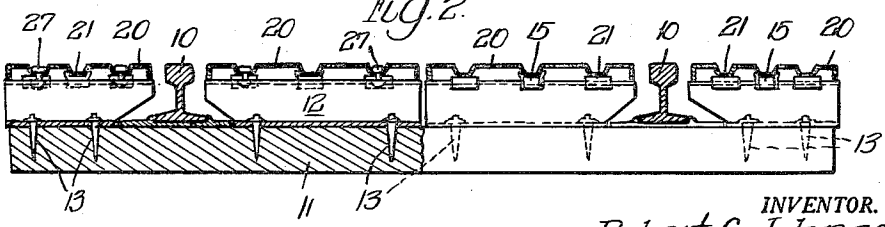


Fig. 2



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Fig. 3

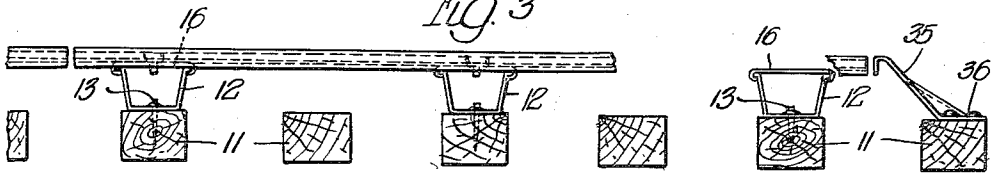


Fig. 4

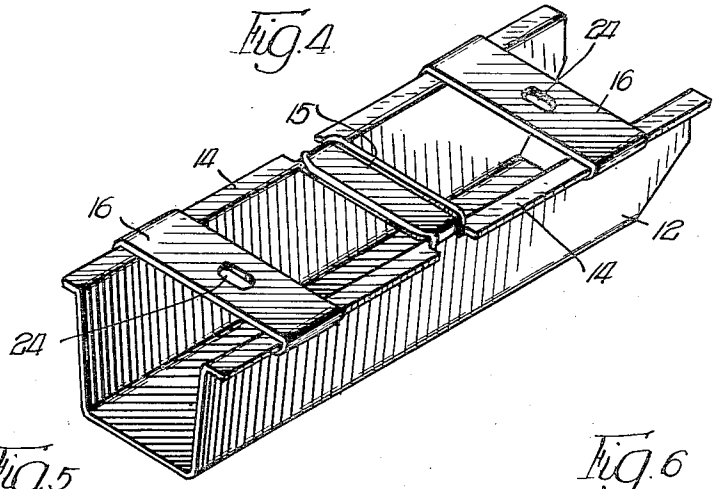


Fig. 5

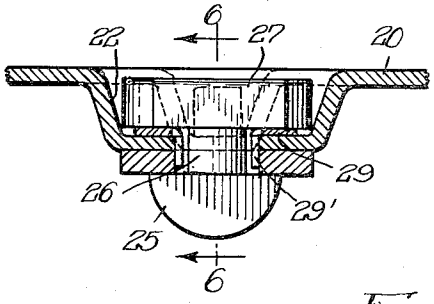


Fig. 6

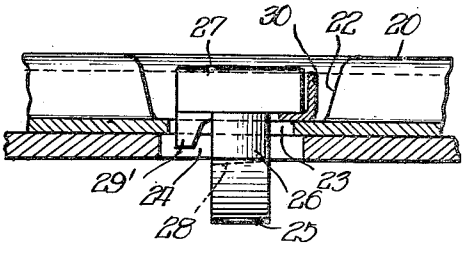


Fig. 7

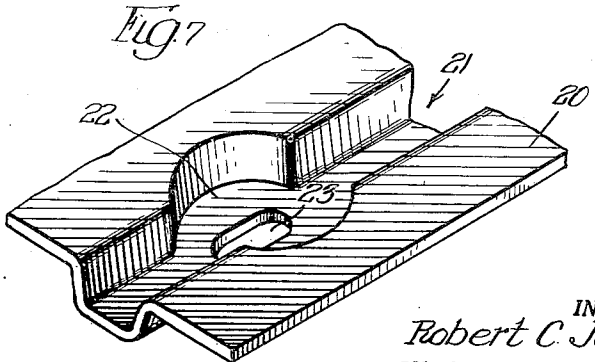
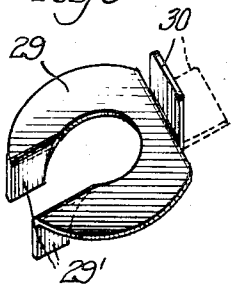


Fig. 8.



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RAILROAD GRADE CROSSING

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Application March 14, 1955, Serial No. 493,980

7 Claims. (Cl. 238—8)

This invention relates to an improvement in railroad grade crossings, and the object is to provide a plurality of preformed corrugated metallic plates supported upon metallic standards extending transversely of the plates, the plates being adapted to be located between and outside of the rails and in plane with the treads of the rails, with the standards resting upon the ties for affording a substantial foundation for the plates. The crossing is made up of a plurality of said plates arranged adjacent to one another according to the size of the crossing.

Inclined plates are secured to the ties at the sides of the crossing to eliminate abrupt approaches thereto.

It is a further object of the invention to provide a readily installable crossing which may be installed and removed without damage to the track structure and may thereby be used as a temporary crossing, such as is often required in connection with construction projects, as a surface covering for scale pits, as a crossing surface over spur tracks intersecting driveways, etc., inside industrial plants, etc.

Other objects and advantages of the invention will be apparent from the following description thereof.

Referring now to the accompanying drawing forming part of this application and wherein like reference characters indicate like parts:

Figure 1 is a top plan view of the invention, partly broken away.

Figure 2 is a cross sectional view on line 2—2, Fig. 1.

Figure 3 is a broken side view of Fig. 1

Figure 4 is a perspective view of a portion of one of the supporting channels or standards for the crossing plates.

Figure 5 is a section of line 5—5 of Fig. 1.

Figure 6 is a section on line 6—6 of Fig. 5.

Figure 7 is an enlarged perspective view of a portion of a crossing plate in the area of a fastener pocket therein.

Figure 8 is a perspective view of the washer for the fastening means.

In the drawings, the rails of a track are shown at 10—10, and the ties at 11. In the area of a grade crossing over said track, on alternate ties there is secured upwardly facing support channels or standards 12. The web of each channel rests flatwise upon the upper surface of the tie and is secured thereto by spaced lag screws 13. These channels have slightly outwardly flaring side walls which terminate in narrow lateral flanges 14, as seen clearly in Fig. 4. Normally there is a channel on each end of the tie outside of the rails, and two such channels placed end to end on the tie between the rails. Thus four of such channels are placed on one tie. While there is shown two channels between the rails for economy of manufacture, but one channel in this area would suffice with equal effectiveness. Midway of each channel the flanges 14 are cut away to allow for application of an anti-thrust bar 15 which has upwardly turned side flanges, and downturned end flanges which are secured to the upper edges of the side walls of the channel. Each support channel is also provided with a pair of tension bars 16 which are flat pieces of metal with turned over ends fitting over the outer edges of flanges 14 and slidable therealong, they being placed on opposite sides of the anti-thrust bar, as shown in Fig. 4.

Located between and also outside of each rail is a pluraiity of panels, indicated at 20, which are secured to the tension bars 16 of the support chanels 12. The side walls of the support channels are of a height so as to support the panels in plane, or substantially so, with the upper surface of the bulb of the rails 10. Each panel is provided with a plurality of longitudinal depressed corrugations 21, one being centrally disposed along the panel and which rests upon the anti-thrust bar 15 of the support channels. When composed of three corrugations, as illustrated in Fig. 1, adjacent each end of each outer corrugation, the walls of the corrugation are widened forming a pocket, as shown at 22 in Fig. 7. Within the base of each pockets 22 is formed a longitudinally elongater hole 23. Similar holes 24 are formed in each tension bar 16, so that when the panels are placed thereon the bars 16 may be moved along the channel until holes 24 register with holes 23.

A rivet-like fastener is provided having an elongated head portion 25, a cylindrical shank 26, and an elongated base portion 27. The shoulder formed at the juncture of the head and shank portion, on opposite sides of said shank, is inclined slightly to the axis of said shank, as shown by dotted line 28. The length of the shank is approximately equal to the combined thickness of the material of the panels, the tension bars, and special lock washer 29. This lock washer is U-shaped to fit about the shank 26 and is provided with depending wings 29' and a tab 30 which may be bent upwardly against a side of the base portion 27 of the fastener. Thus the head 25 of the fastener, with the washer applied to the shank 26, may be placed through registering holes 23 and 24 and then turned 90° or until the long axis of head 25 is transverse the long axis of hole 23. During the turning of the fastener the inclined shoulder 28 acts as a cam, drawing the panel tightly to the tension bar of the support channel, so that when all fasteners are thus applied the crossing surface is perfectly secure. Of course, the tabs 30 are bent up, as shown in Fig. 6, after the fasteners have been turned to locked position, and the fastener cannot be turned again until the tab is bent down away from base 27. Wings 29' of the washer extend within the registering holes 23 and 24, which, together with tab 30 when bent up, as shown in Fig. 6, form an effective lock.

At each side of the crossing are placed a plurality of inclined guard sections 35 which are in length equal to the width of the panel sections. Each guard section has a flat angular base portion 36 provided with holes for spikes to secure the guard section to a tie, as shown in Fig. 3. To stiffen the guard section it is provided with an outwardly pressed corrugation 37, any number of which may be used, but I have found that two are ample for ordinary purposes. Thus an attractive finish for the side of the crossing is provided, but which also prevents any loose dragging equipment which may be hanging from a car of a passing train from catching on the otherwise bare edge of the crossing side.

I claim:

1. A railroad crossing comprising a plurality of support channels resting upon ties of the track, an anti-thrust bar spanning the flanges of each channel, a tension bar engaging and slidable along the flanges of said support channels, a panel having a longitudinal depressed corrugation resting upon said anti-thrust bar, and means securing said panel to said tension bar.

2. A railroad crossing comprising a plurality of support channels resting upon ties of the track, means securing the webs of said support channels to said ties, tension bars engaging and slidable along the flanges of each channel, a panel upon said channels, and means securing said panel to said tension bars.

3. A railroad crossing comprising a plurality of support channels resting upon ties of the track transversely of the rails, means securing said support channels to said ties, an anti-thrust bar spanning the flanges of said channel, tension bars engaging and slidable along the flanges of each channel, a panel upon said channels, said panel having a longitudinal depressed corrugation resting upon said anti-thrust bar, and means securing said panel to said tension bars.

4. A railroad crossing, comprising a plurality of standards having upwardly extending spaced flanges, tension bars, having holes therethrough, extending transversely over and slidable along said flanges, and a panel having holes therethrough secured to said tension bars, and means extending through the holes of the panel and bars for securing the panel to said bars.

5. A railroad crossing, comprising a plurality of standards having upwardly extending spaced flanges, tension bars extending transversely over said flanges, and having openings therethrough, and a panel having spaced openings therethrough, secured to said tension bars, said tension bars being slidable along said flanges to bring the openings therethrough into register with the openings in said panel, and means extending through said registering openings to secure said panel to said tension bars.

6. A railroad crossing, comprising a plurality of standards resting longitudinally upon ties of the track and

having upwardly extending spaced flanges, tension bars extending transversely over and slidable along said flanges, and having openings therethrough, and a panel having longitudinal depressed corrugations having spaced openings therethrough, secured to said tension bars, and means extending through the openings of the corrugations and tension bars to secure said panel to said tension bars.

7. A railroad crossing comprising a plurality of support channels, the webs of said channels resting upon and being secured to ties of the track, the flanges of said channels terminating in lateral flanges, an anti-thrust bar spanning and fixed to the flanges of each channel, a tension bar having hooked ends engaging the lateral flanges of said support channels and slidable therealong, a panel upon said channels, said panel having a longitudinal depressed corrugation resting upon said anti-thrust bar, and another corrugation resting upon said tension bar, said tension bar and said other corrugation having registrable holes therethrough, and means extending through the holes of the panel and bar for securing the panel to said bar.

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