

July 19, 1938.

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2,124,247

RAIL CROSS-OVER

Filed Nov. 9, 1936

2 Sheets-Sheet 1

Fig. 1.



Fig. 2.

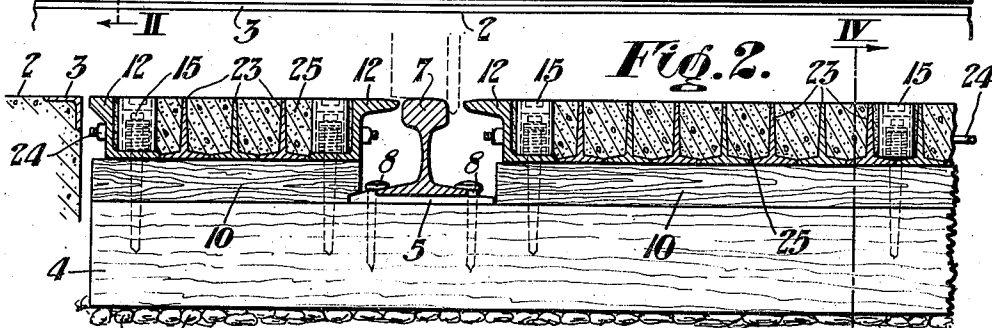
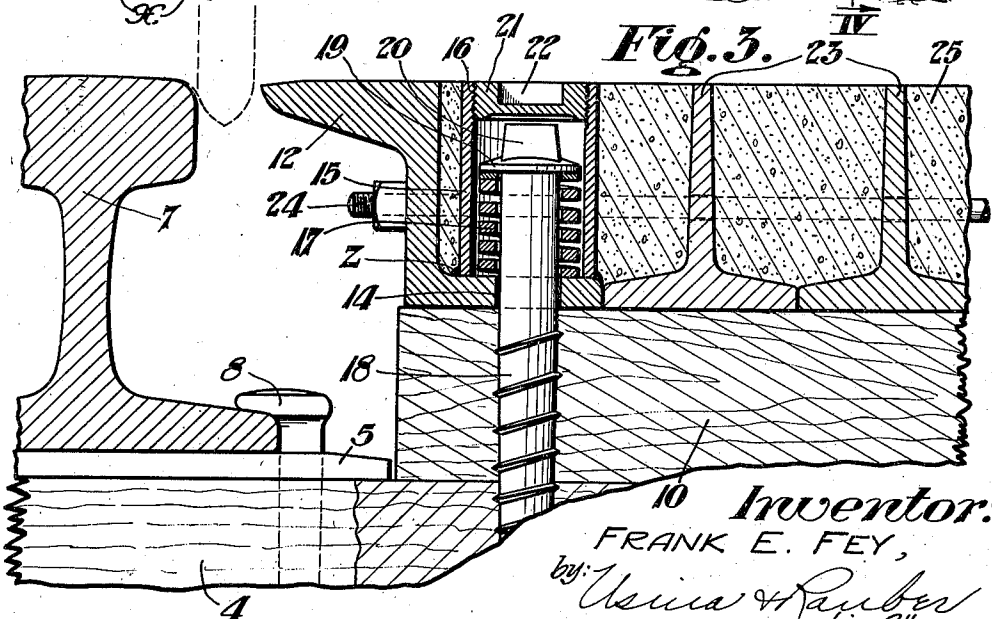


Fig. 3.



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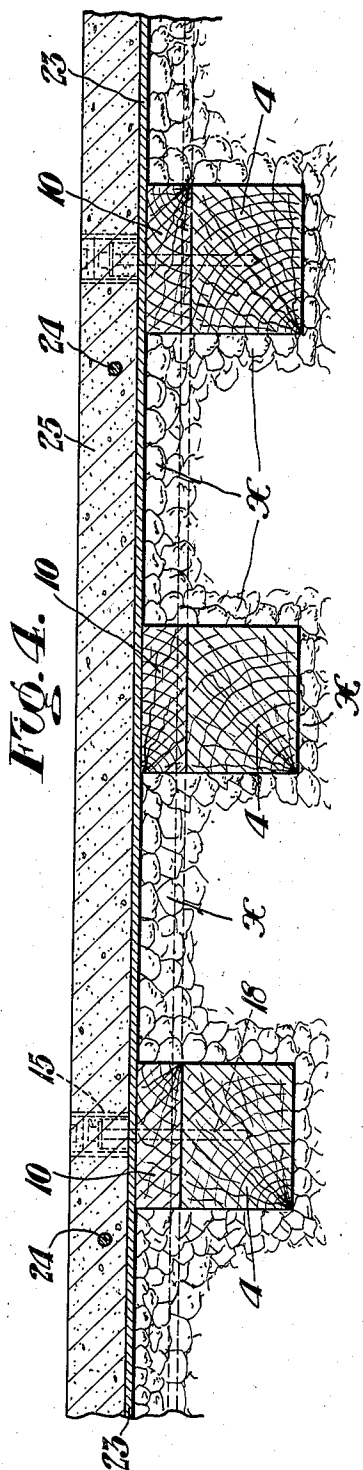
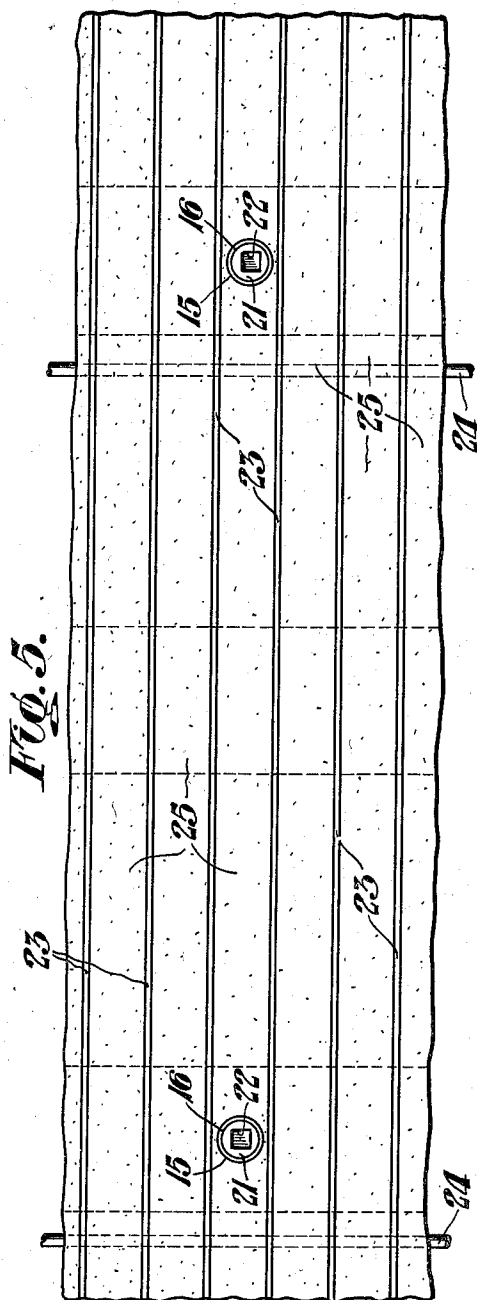
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,124,247

RAIL CROSS-OVER

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Application November 9, 1936, Serial No. 109,969

2 Claims. (Cl. 238—8)

This invention relates to rail cross-overs, and more particularly those which are interposed in roadways to permit the passage of roadway vehicles over railway tracks.

Considerable difficulty has been experienced in constructing and maintaining efficient rail cross-overs, such as are increasingly in demand because of our present day high-speed traffic, which requires a smooth, level and firm surface.

It is among the objects of the present invention to provide a rail cross-over which eliminates the many disadvantages of prior art devices.

Another object is to provide a rail cross-over which is easily constructed, very strong and durable and, at the same time, readily removable to permit the rapid repair and maintenance of the crossing.

The foregoing and other advantages will become apparent after referring to the accompanying drawings, in which:

Figure 1 is a fragmentary plan.

Figure 2 is a sectional view on the line II—II of Figure 1.

Figure 3 is an enlarged fragmentary detail.

Figure 4 is a sectional elevation taken on line IV—IV of Figure 2.

Figure 5 is a fragmentary top plan.

Referring more particularly to the drawings, the numeral 2 designates the ends of a roadway employing the device of the invention. These ends 2 may be of concrete or other suitable material and are provided with the usual corner angle irons 3.

The ties 4 of the railway are disposed substantially below the upper surface of the ends 2 of the roadway, together with the accompanying ballast which is indicated at X. These ties 4 carry suitable tie-plates 5 to accommodate the usual railway rail 7, the latter being secured thereto by spikes 8. On either side of each of the rails 7 each of the ties 4 carries a superimposed filler block 10. Parallel Z-shaped sections 12 are disposed transversely on the filler blocks 10; one Z-shaped section being used adjacent each end 2 of the roadway and adjacent each side of each of the rails 7. The bottom flange of each of the Z-shaped sections 12 is directed away from the element to which it lies adjacent, and each of these flanges (which lie upon the filler blocks 10) is apertured, as indicated at 14. Immediately above each of the apertures 14 in the bottom flanges of the Z-shaped sections 12 there is disposed a tubular sleeve 15 whose upper end occupies substantially the same plane as that of the upper surfaces of the Z-

shaped sections 12. These tubular sleeves 15 preferably are welded in position, as shown at Z, and are internally screw-threaded on their upper ends, as at 16.

Referring more particularly to Figure 3 of the drawings, it will be noted that the inside diameter of each of the tubular sleeves 15 is substantially greater than the diameter of the apertures 14 in the Z-shaped sections 12.

A helical spring 17 is vertically disposed in each of the tubular sleeves 15 with its bottom resting on the upper surface of the bottom flange of one of the Z-shaped sections 12. An elongated lag-screw 18 is disposed to extend through each of the helical springs 17, apertures 14, filler blocks 10 and into the adjacent tie 4. These lag-screws 18 are provided on their upper ends with enlarged heads 19 and squared portions 20 which permit of the application of a wrench. After each lag-screw 18 has been positioned, and each of the helical springs 17 suitably compressed, the upper ends of the tubular sleeves 15 are closed by means of externally screw-threaded plugs 21 which are provided on their upper surfaces with squared detents 22 which likewise permit of the application of a wrench. Such a construction and arrangement also permits ready removal and interchangeability of the unit, which unit, for example, may be the structure included between the spaced sections 12.

Between the Z-shaped sections 12 there are disposed a plurality of inverted T-sections 23 which rest on the filler blocks 10 with their upper ends occupying substantially the same plane as that occupied by the upper ends of the tubular sleeves 15 and the upper surfaces of the Z-shaped sections 12. If desired, these inverted T-sections 23 may be connected together, and to the Z-shaped sections 12, by any suitable means, such as a tie bolt 24.

Concrete or other cementitious material 25 is poured into all of the spaces between the Z-shaped sections 12, tubular sleeves 15 and inverted T-sections 23 to the same level as the plane occupied by the upper surfaces thereof. This provides a smooth, level and firm traction surface for roadway vehicles.

Referring to Figure 4 of the drawings, it will be noted that the Z-shaped sections 12 and inverted T-sections 23 rest not only upon the filler blocks 10, which are mounted on the ties 4, but also upon the ballast X. Thus, these elements are restrained against downward movement.

In operation, as the railway rolling stock moves along the track 7, the ties 4 will be depressed in

the manner well known in the art, and the latter will, to some extent, carry downwardly with them the filler blocks 10. This downward movement, however, will not be transmitted to the Z-shaped section 12 and inverted T-sections 23 because the latter rest upon the ballast X and the downward movement of the lag-screws 18, which is established by the depression of the ties 4, merely compresses the helical springs 17, whereby the crossing unit of the invention will remain stationary.

10 In the foregoing manner, it will be seen that the lag-screws 18 serve as dowel pins, permitting the ties 4 and filler blocks 10 to move vertically with respect to the crossing unit while at the same time restraining the horizontal movement of the latter.

While I have shown and described one specific embodiment of my invention, it will be understood that I do not wish to be limited exactly thereto, since various modifications may be made without departing from the scope of my invention, as defined by the following claims.

I claim:

1. A rail crossing comprising at least one rail tie disposed on the road-bed, at least one rail mounted on said rail tie, a crossing unit resting on said rail tie and said road-bed, and fastening means connecting said crossing unit to said rail tie, said fastening means being constructed and arranged to permit the downward movement of said rail tie relative to said crossing unit.

2. A rail crossing comprising at least one rail tie disposed on the road-bed, at least one rail mounted on said rail tie, a crossing unit resting on said rail tie and said road-bed, a fastening element connecting said crossing unit to said rail tie, said fastening element being constructed and arranged to permit the downward movement of said rail tie relative to said crossing unit, and resilient means for opposing the downward movement of said rail tie relative to said crossing unit.

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