Oct. 31, 1933. A. HUMPHRIES 1,932,895

HIGHWAY RAILROAD CROSSING

Filed June 18, 1932 4 Sheets-Sheet 1

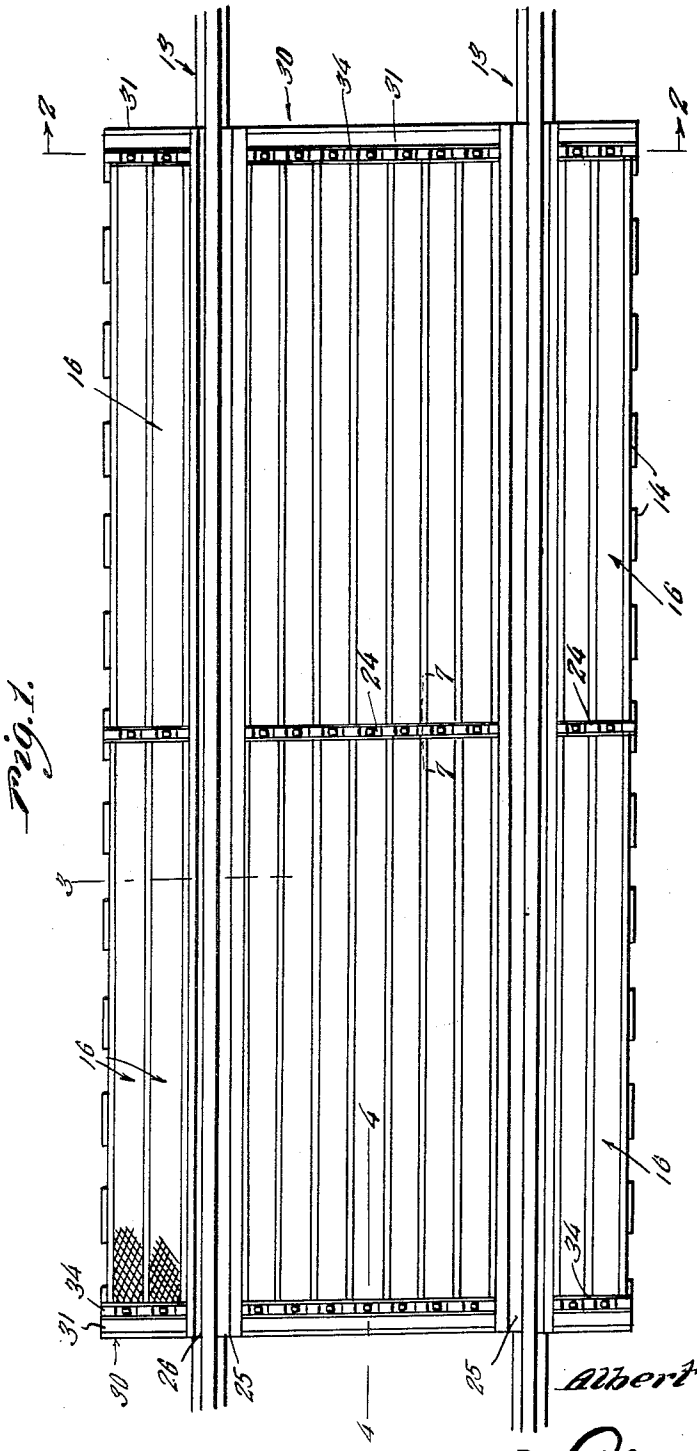


Fig. 1.

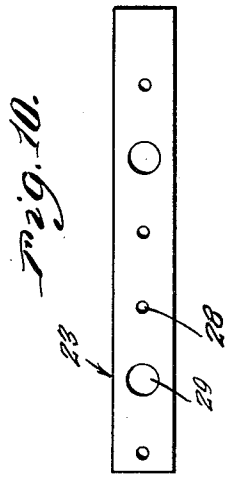


Fig. 2.

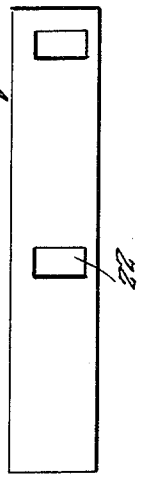


Fig. 3.

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HIGHWAY RAILROAD CROSSING

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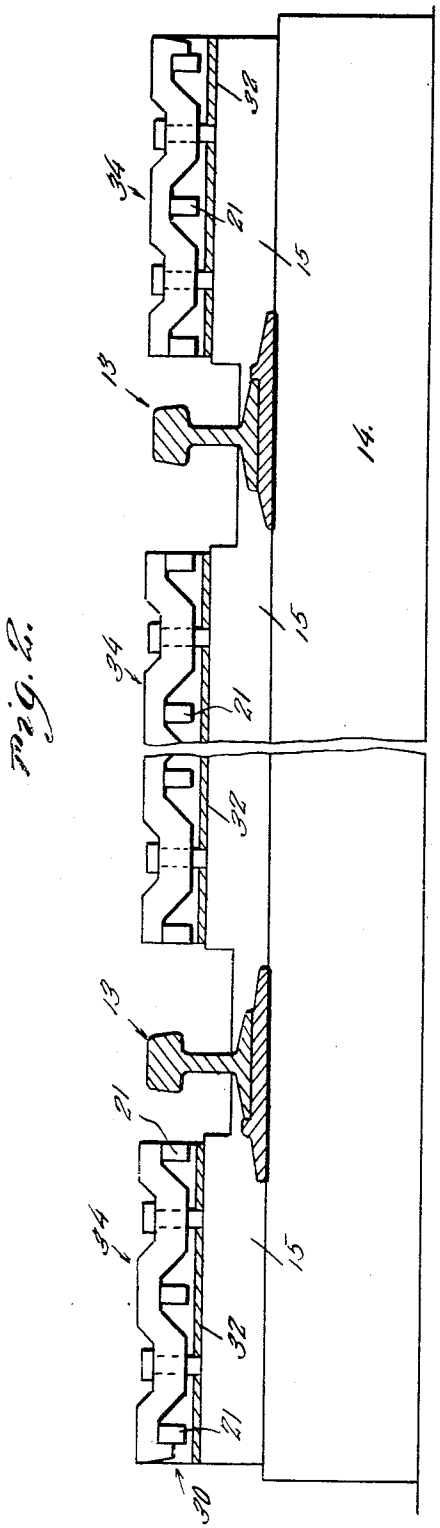


Fig. 2.

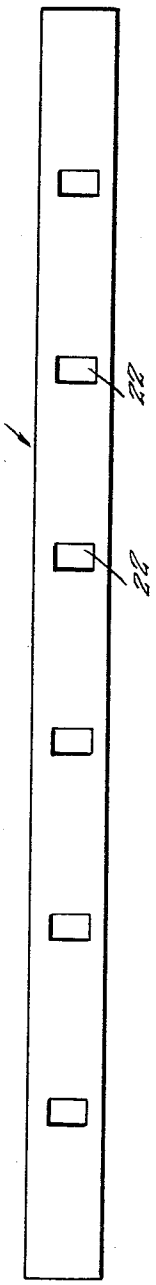


Fig. 4.

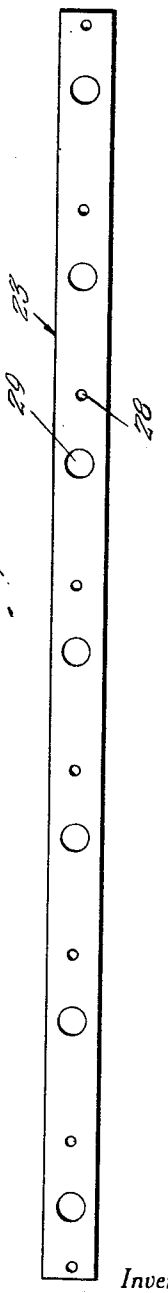


Fig. 3.

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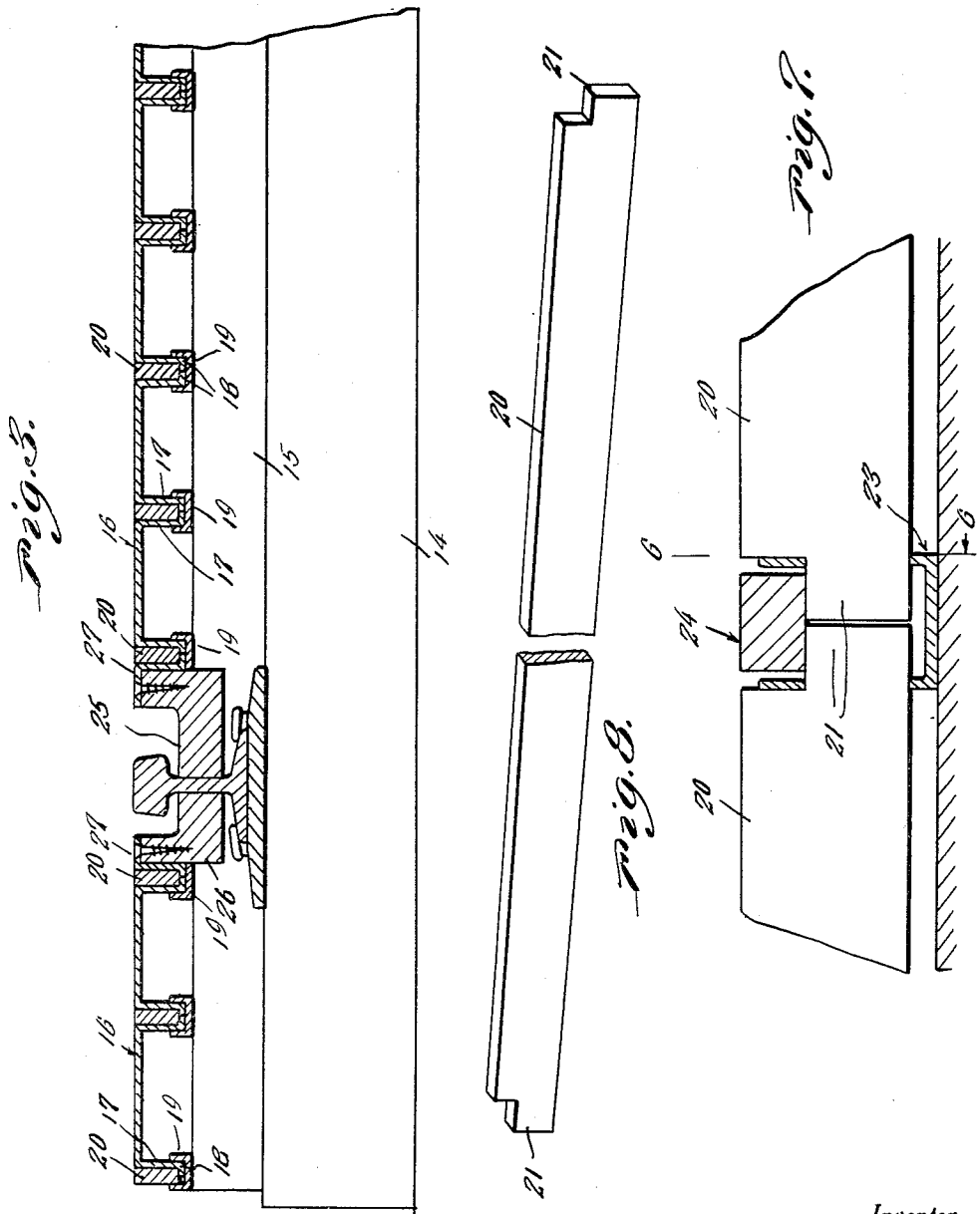
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HIGHWAY RAILROAD CROSSING

Filed June 18, 1932 4 Sheets-Sheet 3



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HIGHWAY RAILROAD CROSSING

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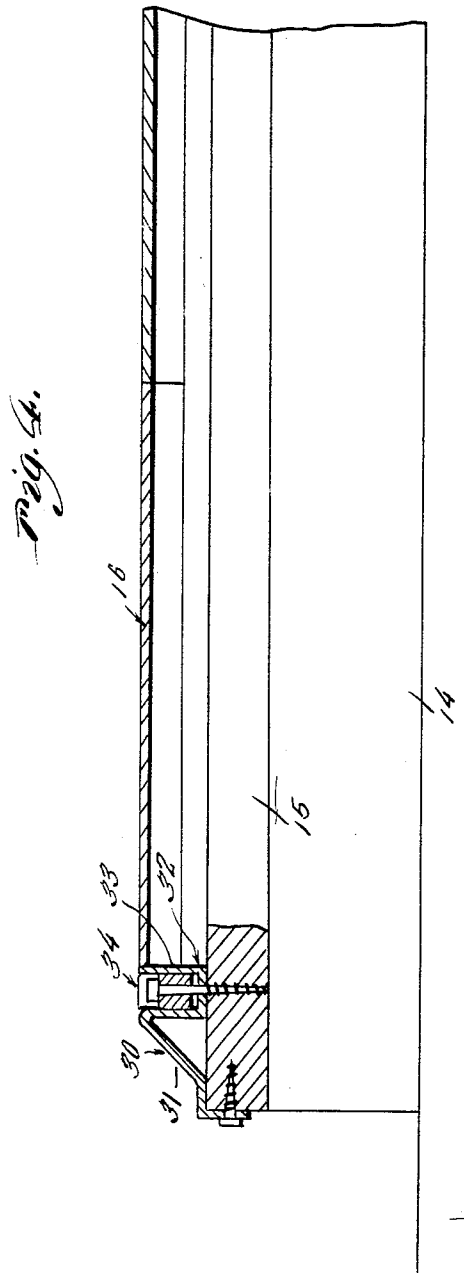


Fig. 4.

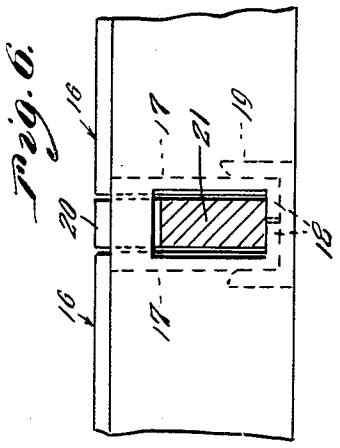


Fig. 6.

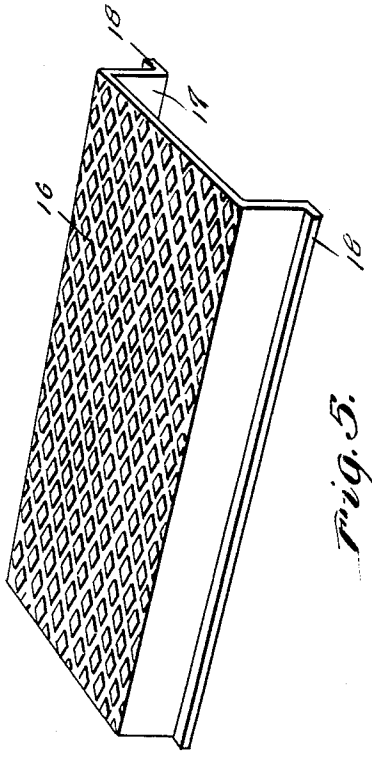


Fig. 5.

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UNITED STATES PATENT OFFICE

1,932,895

HIGHWAY RAILROAD CROSSING

Albert Humphries, Taft, Tex.

Application June 18, 1932. Serial No. 618,037

4 Claims. (Cl. 238—8)

This invention relates to an improved railway crossing for use by pedestrians and vehicular traffic at a point in the track intersected by a highway.

I am not unmindful of the fact that many different kinds of railway crossings have been perfected, used and patented, in fact, my familiarity with this line of endeavor has inspired me to discover the need for a more dependable and efficient crossing structure. Therefore, in carrying the present inventive conception into actual practice, I have evolved and produced a novel construction characterized by simplicity, strength and durability, and such other structural features and refinements as serve to permit the invention to better fulfill the requirements of a structural contribution to this field of invention.

My improved railroad crossing embodies effectively united and joined metal traction and tread plates structurally designed and co-related to promote longevity in performance and provide the requisite weatherproof connections between parts.

I shall not attempt to further introduce here the explicit formation and coherent relationship of structural details, for these will become more effectively apparent from the following description and accompanying drawings.

In the accompanying illustrative pictorial drawings wherein like numerals are employed to designate like parts throughout the same:

Figure 1 is a top plan view showing a grade, highway or railroad crossing constructed in accordance with the principles of the present invention.

Figure 2 is an enlarged view in section and elevation taken approximately on the plane of the line 2—2 of Figure 1.

Figure 3 is a similar sectional view taken on the plane of the line 3—3 of Figure 1.

Figure 4 is a detail longitudinal sectional view also taken on the line 4—4 of Figure 1.

Figure 5 is a perspective view of one of the tread plates or units.

Figure 6 is a section taken somewhat on the plane of the line 6—6 of Figure 7.

Figure 7 is a section taken on the line 7—7 of Figure 1.

Figure 8 is a detail perspective view.

Figures 9 and 11 are side elevational views of parts hereinafter designated as joining channels.

Figures 10 and 12 are bottom plan views of the joining channels seen in Figures 9 and 11 respectively.

Referring now to the explanatory drawings by distinguishing reference numerals it will be observed that the track rails are denoted by the numerals 13 and the conventional transverse cross ties are indicated at 14. In accordance with the invention each cross tie is provided on its top with suitably proportioned timbers which may be conveniently differentiated as risers 15. Obviously as the name implies, these risers serve for elevating the tread plates or units 16 which are anchored thereto to dispose the tread plates in a substantially even plane with the rail tread.

In Figure 5 I have shown one of these units 16 and it will be observed that the traction face thereof is suitably roughened to promote effective traction for the vehicular traffic. Also, each unit is substantially channel-shaped in cross section and the depending side walls 17 thereof are provided with outstanding anchoring flanges 18. In practice, a suitable number of the units 16 are provided to form a crossing of appropriate dimensions such as illustrated for example in Figure 1. Therefore these units 16 are of appropriate length and are arranged in longitudinal order between and on opposite sides of the track rails.

In the form of the invention illustrated in Figure 1, I provide two longitudinally spaced groups of tread plates, these being joined together at their adjacent ends and suitably fastened down at their outer ends.

The means for anchoring the tread plate to the risers 15 comprises a plurality of longitudinal spaced parallel anchoring channels 19. These channels are suitably fastened across the risers 15 as shown in Figure 3, and the inturned flanges 18 of the respective tread units 16 are confined in the channels 19.

Located in the trough-like space between the side walls 17 of the respective units 16 are steel beams 20 each beam being of a length slightly greater than the section 16 with which it co-operates. In fact, the ends of the beams are notched to provide connecting extensions 21. In practice, these extensions are adapted to extend through alined slots 22 in the joining channels 23.

As seen in Figures 9, 10, 11, and 12, there are two sets of these joining channels 23. They are however the same in construction and the same reference characters are employed to denote them. The only difference between these joining channels is that one set is short to take care of the tread plates on the outer sides of the track rails, while the other channel is somewhat longer so as to occupy the space between the track rails.

These joining channels are located at the approximate transverse center of the crossing as a whole. As seen in Figure 7, by extending the extension 21 into the channels 23 through the side wall holes 22, said ends may be joined together and fastened down by the zig-zag clamping bars 24. The clamping bars are simply fastened to the risers 15 through the medium of spikes, or lag screws.

Directing attention to Figure 3, it will be observed that the numerals 25 and 26 designate gap fillers of wood which are of L-shaped cross sectional shape as shown. These fillers are provided with flanged uniting clips 27 to take care of the adjacent beam 20, the flanged lower ends of said clips fitting into the underlying anchoring channels 19. It is, however, cutomary to employ gap closures or fillers in crossings of this type.

It is to be pointed out in connection with the joining channels 23 that the bottoms or web portions thereof are provided with nail holes 28 to permit them to be fastened to the adjacent risers and drain openings 29 to facilitate passage of lag screws. Further, in practice, asphalt (not shown) is poured in the beam troughs so that the asphalt co-operates with the beam and side walls 17 of the tread plates in providing waterproof joints between the respective plates.

Somewhat the same sort of construction is provided at the terminal ends of the beams and tread plates or units 16 for fastening these parts in place as shown in Figure 4. As seen in the last-named figure the numeral 30 designates an especially formed sheet-metal fixture which comprises an attaching flange 31 securely fastened in place, and a channel 32.

The inner wall 33 of this channel is apertured to permit the adjacent extensions of the beams to protrude into the channel to be fastened down by the zigzag clamping bar 34. This wall 33 also serves as a closure for the adjacent open end of the unit 16. In fact, it serves as an abutment or stop against which said units bear to prevent longitudinal or endwise slippage thereof. Consequently the fixtures 30 are important in maintaining the unit 16 in place against endwise displacement while at the same time serving to provide dependable fastening means for the adjacent end portions of the beams 20.

The channel 32 and parts 21 and 34 located therein are covered with asphalt which is poured into the channel 32 the same as in the case of the aforesaid joining channels 23. Fundamentally, both types of channels co-operate in providing the requisite water-tight joints for the inner and outer ends of the complemental tread units 16.

It is evident that the gap closing members or fillers 25 and 26 are interposed between the adjacent portions of the platform of the crossing at the points of both track rails 13, as is evident from Figures 1, 2 and 3. It is also manifest that the aforesaid risers 15 are of appropriate sectional construction, there being a riser for each cross tie and said risers serving to elevate the anchoring channels 19 and the tread units 16 which are anchored in said channels.

It will be noticed that I have employed the term "channels" for several of the parts because of the channel-shaped cross section thereof. It is to be noted, however, that the channels 19 are distinguished as "anchoring channels", the channels 23 are differentiated as "joining" channels, and the remaining channels 32 as terminal joining channels as well as abutment means, and further as closure means for the adjacent open end of the channel-shaped tread units or plates 16.

In both instances, the so-called joining channels 23 and 32 have wall portions formed with apertures to receive the extension 21 on the reinforcing and space filling beams 20. Moreover, the zig-zag clamping members or bars 24 and 34 are the same in construction, being located in their respective channels and serving to bind the adjacent extensions 21 firmly in place.

The anchoring channels 29 are disposed in spaced parallelism and extend longitudinally, that is, at right angles to the cross ties, while the joining channels extend transversely that is, parallel to the cross ties. I mention this to permit the reader to observe the distinction of the channels as mentioned in the following claims.

It is thought that the description taken in connection with the drawings will enable a clear understanding of the invention to be had. Therefore, a more lengthy description is thought unnecessary.

While the preferred embodiment of the invention has been shown and described, it is to be understood that minor changes coming within the field of invention claimed may be resorted to if desired.

I claim:

1. In a railroad crossing construction of the class described, in combination, spaced parallel track rails, underlying cross ties, risers attached to and arising from the cross ties, spaced parallel longitudinally disposed anchoring channels secured to said risers, and a platform having portions located between and on the outer sides of said track-rails, said platform comprising a plurality of channel-shaped tread plates, the walls of said plates being formed with out-turned flanges, the adjacent flanges of complemental walls being seated in said anchoring channels.

2. In a railroad crossing construction of the class described, in combination, spaced parallel track rails, underlying cross ties, risers attached to and rising from the cross ties, spaced parallel longitudinally disposed anchoring channels secured to said risers, and a platform having portions located between and on the outer sides of said track rails, said platform comprising a plurality of channel-shaped tread plates, the walls of said plates being formed with out-turned flanges, the adjacent flanges of complemental walls being seated in said anchoring channels, and reinforcing and space-filling beams fitted into the trough-like spaces existing between said flanged walls, and fastening means for said beams to firmly press and retain the flanges of said walls in the anchoring channels.

3. In a structure of the class described, in combination, spaced parallel track rails, cross ties located therebeneath, risers secured to said cross ties, anchoring channels fastened to said risers, a platform composed of a plurality of channel-shaped tread plates, the walls of said tread plates being formed with retaining flanges located in said anchoring channels, maintaining and reinforcing beams located between the adjacent spaced walls of the tread plates to hold the retaining flanges in said anchoring channel, said beams having their opposite ends reduced to provide extensions, joining channels fastened to predetermined risers, the joining channels having their side walls apertured to permit the extensions of the beams to project into the channels, and zig-zag clamping bars fastened in said

joining channels and engaging said extensions to hold the beams in place.

4. In a structure of the class described, in combination, a pair of track rails, a plurality of underlying cross ties to which said rails are fastened, risers fastened to said cross ties, longitudinally extending spaced parallel anchoring channels fastened to said risers, a sectional crossing platform made up of a plurality of companion tread units, said tread units being disposed in longitudinal side-by-side relationship, each unit being of channel-shape cross section and the wall portions thereof being formed with outstanding retaining flanges located in said anchoring channels, a plurality of alined transversely disposed joining channels secured to the risers between adjacent ends of the respective half-sections of said platform, said joining channels having their opposed side walls formed with apertures, a plurality of longitudinally disposed beams fitted in the trough-like spaces between adjacent walls of said tread units to retain said flanges in said anchoring channels, the inner end of said beams being reduced to form extensions extending through the apertures in said joining channels, clamping members located in said joining channels for holding said extensions in place, a pair of duplicate terminal fixtures located at the other ends of the half sections of said platform and secured to the adjacent end portions of the aforesaid risers, said fixtures each including a channel whose inner wall is apertured, said wall being of a dimension to serve as a stop and closure for the adjacent open end of said tread unit, the adjacent ends of said beams being formed with extensions projecting into the channel through said inner walls, and clamping members located in said terminal channels to hold said beam and extensions in place.

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