Nov. 6, 1934. R. T. BELL 1,979,790

RAILWAY GRADE CROSSING CONSTRUCTION

Filed Jan. 19, 1931

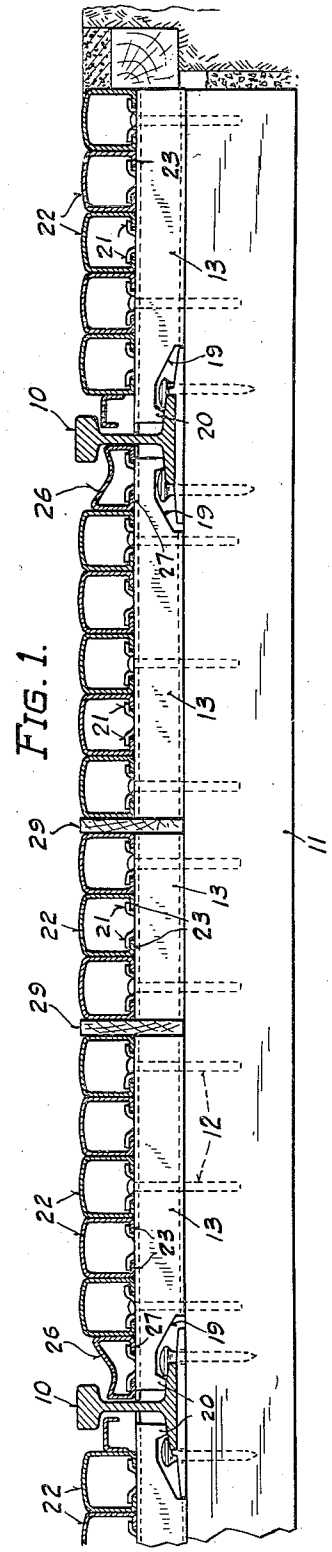


FIG. 1.

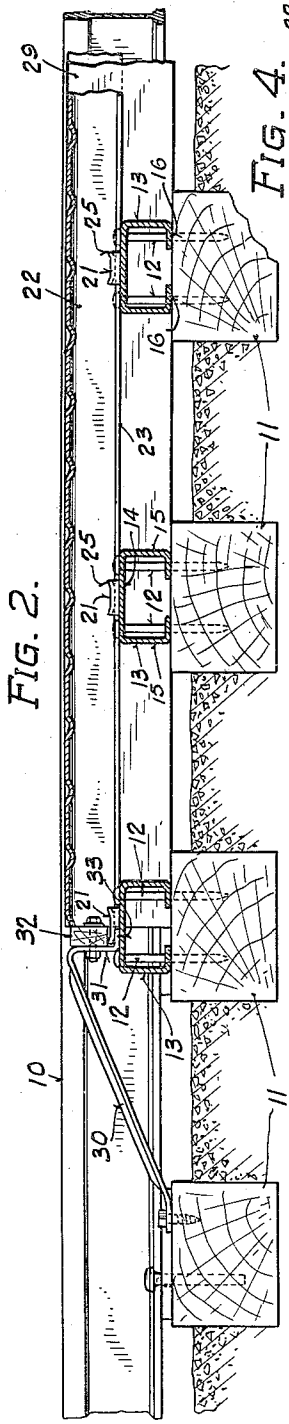


FIG. 2.

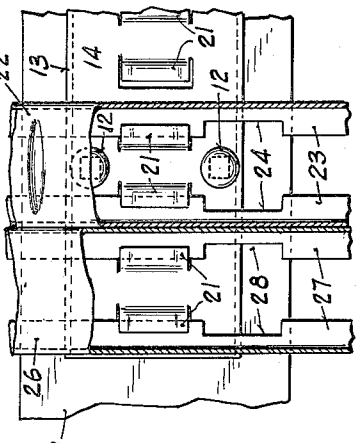


FIG. 4.

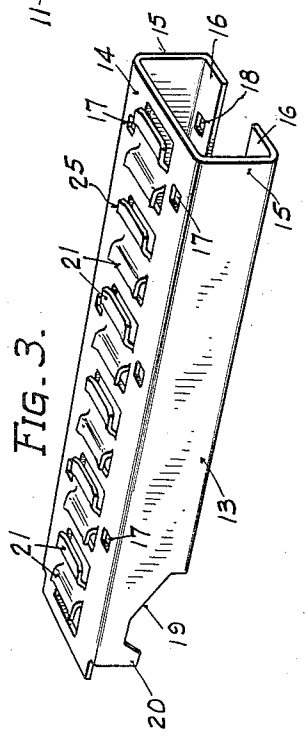


FIG. 3.

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RAILWAY GRADE CROSSING CONSTRUCTION

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Application January 19, 1931, Serial No. 509,757

3 Claims. (Cl. 238—8)

This invention relates to railway grade crossing construction and constitutes an improvement over the construction shown in my co-pending application, Serial No. 452,335, filed May 14, 1930.

Among the objects of the present invention is to provide a railway grade crossing which is more economic of manufacture and installation and which is more durable in service and simpler of construction.

Referring to the drawing wherein is illustrated a preferred embodiment of the invention:

Figure 1 is a cross section of a railway grade crossing made according to the present invention;

Fig. 2 is a longitudinal section thereof;

Fig. 3 is a perspective view of one of the combined tie plate and spacing members; and

Fig. 4 is a fragmentary plan view, partly in section, of the crossing showing the manner in which the crossing elements and flange channels are secured to the spacing members.

Referring now more particularly to the drawing, the reference character 10 indicates parallel rails of a railroad track, which rails are secured to cross ties 11 in any suitable manner. Secured to the cross ties 11 by means of spikes 12 are combined tie plate and spacing members 13. The spacing members 13 are made of sheet metal in the form of channels having upper web portions 14 and side walls 15, said side walls having their lower edge portions bent inwardly toward each other in a plane parallel to the upper web 14 forming flanges 16 to provide substantial bearing surface for the spacing members, and also to serve as means for securing the same in position. In securing the spacing members to the cross ties, the spikes 12 are passed through aligned holes 17 and 18 in the web portion 14 and bearing flanges 16, respectively, and driven into the cross ties 11. This manner of securing the spacing members to the ties by passing the spikes through apertures in the flanges 16 prevents spreading of the side walls of the spacing members, which might otherwise occur during the passage of heavy loads over the crossing.

Adjacent the rails 10 the spacing members have their end portions cut away as at 19 so as to allow the end portions to overhang the lower flange of the rails and terminate closely adjacent the rails. In cutting out the portion 19 depending legs 20 are allowed to remain to provide means for supporting the overhanging end of the spacing member during passage of heavy loads over the crossing, the legs 20 being adapted to rest on the lower flange of the rail 10 when the spacing member is in adjusted position.

The upper web of the spacing members is provided with ears 21 which are struck up from the spacing member to provide means for securing crossing elements 22 thereto. The crossing elements 22 have inturned bearing flanges 23 which are adapted to underlie the struck up ears 21 of the spacing members to secure the crossing members 22 in adjusted position.

The bearing flanges 23 of the crossing elements have cut out portions 24 at spaced intervals corresponding to the distance between adjacent spacing members. These cut out portions are adapted to expedite the installation of the crossing elements. This is accomplished by first positioning a crossing element with respect to the several spacing elements so that the struck up ears of the latter register with the cut out portions in the flanges of the crossing members so that the latter may rest upon the spacing members, and then driving the crossing member longitudinally to cause the cut out portions to move out of registry with the ears, which latter then function to hold the crossing elements in place. The ends of the ears are inclining slightly upwardly, as shown at 25, to insure engaging coaction between the spacing members and the crossing elements during installation of the latter.

Adjacent the inner sides of the rails 10 are sheet metal flange channels 26 which are adapted to accommodate the flanges of car wheels when a train is passing over the crossing. The upper web of the flange channels is made concave so that dirt and other material which may have collected or become lodged adjacent the rails may be expelled by the pressure exerted by the flanges of car wheels thus providing a self cleaning flange channel. The flange channels 26 have the edge portions of their side walls inturned as at 27 in a manner similar to the crossing elements in order that the same may be readily secured to the combined spacer and tie plate 13 and also to provide substantial bearing surface for the channel. The inturned portions 27 of the flange channels have cut out portions 28 similar to the cut out portions 24 of the crossing elements and also serve as a means for expeditious installation, which is accomplished in the same manner as described in connection with the crossing elements.

In cases where the rails have been connected up with a block signal system, insulation 29 is provided in the crossing to prevent the passage

of current from one rail to the other when no car is passing over the crossing. This insulation is provided at two or more places in order to prevent closing of the circuit in case of the passage of a steel tired vehicle over the crossing and extends from the top of the cross ties to a point substantially flush with the top of the crossing elements.

Affixed to the outside spacing member 13 at each end of the crossing and to a cross tie which is longitudinally adjacent the crossing is a sheet metal ramp 30. This ramp is made in sections, the adjacent sections being insulated from each other or spaced apart a distance sufficient to prevent the passage of current therebetween. The purpose of these ramps at the ends of the crossing members is to prevent the catching of loose brake rods or other depending members which may be hanging loose on railway cars during passage thereof over the crossing. Each section of the ramp is provided with a downwardly extending end wall 31 and the several sections have their end walls 31 secured to cross member 32 of wood. The cross member 32 may be omitted if desired. The end walls 31 are provided with lugs 33 bent at an angle of substantially 90° thereto, which lugs are adapted to be inserted under the ears 21 of the end spacing members 13 to prevent upward movement of the ramp. With the lugs 33 so positioned the lower end of the ramp is secured to a closely adjacent cross tie, as shown, thus providing a ramp which may be quickly and expeditiously installed.

The spacer element 13 of the present construction takes the place of the wood spacing element or shims and the metal tie plates described in my former application, and has been found to be more economic of manufacture and installation and also more durable in use.

Although the foregoing description is of a detailed character in order to completely set forth the invention, it is to be understood that the specific terminology is not intended to be restrictive or confining and it is to be further understood that various rearrangements of parts and modifications of structural detail may be resorted to without departing from the scope or spirit of the invention as herein claimed.

Having thus described the invention what is claimed and desired to be secured by Letters Patent is:

1. In a railway grade crossing having rails and ties supporting said rails, crossing elements of less depth than the depth of said rails, sheet metal spacing members for supporting said crossing elements above said ties to maintain the upper surface of said crossing elements substantially flush with the top of said rails, each of said members having an upper web and downwardly extending side walls, the lower edge portions of said side walls being bent inwardly toward each other into a common plane to provide bearing surfaces for supporting the spacing members, the upper web of the spacing members and the inwardly bent lower edge portions thereof being provided with vertically aligned apertures, and spikes passing through said aligned apertures and securing said spacing members to said ties.

2. In a railway grade crossing, sheet metal channels serving as spacing members to support superposed crossing elements each of said channels having an upper web and side walls, the lower edge portions of said side walls being inturned to form bearing flanges, and vertically aligned apertures in said web and said flanges for the passage therethrough of securing spikes.

3. In a railway grade crossing having rails and ties supporting said rails, crossing elements of less depth than the depth of said rails, and extending parallel thereto, sheet metal self-cleaning flange channels constituting foot-guards disposed adjacent the inner sides of said rails and extending parallel thereto with a part thereof underlying the head of the rail, and sheet metal spacing members arranged normal to the rails for supporting said flange channels and crossing elements above said ties to maintain the upper surface of said crossing elements substantially flush with the top of the rails, the ends of said spacing members abutting the rails being modified to present an upper supporting surface which extends to the web of the rail to form a support for the said flange channels, and means integral with said spacing members for securing said flange channels and crossing elements in correlated juxtaposition.

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