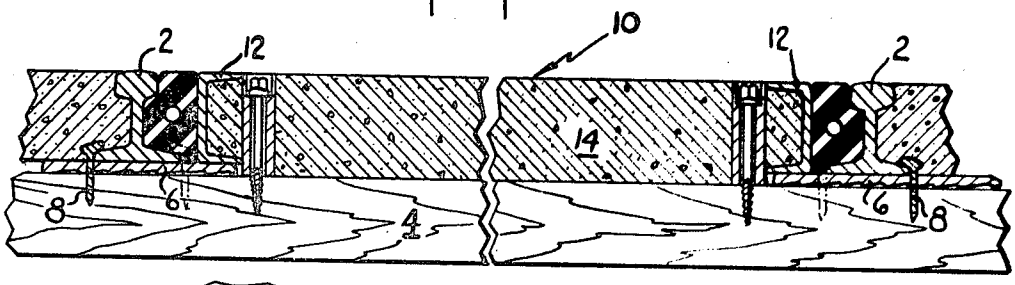
Sept. 30, 1969 S. S. URALLI ET AL 3,469,783

RAILROAD CROSSING

Filed Aug. 11, 1967

Fig. 1.



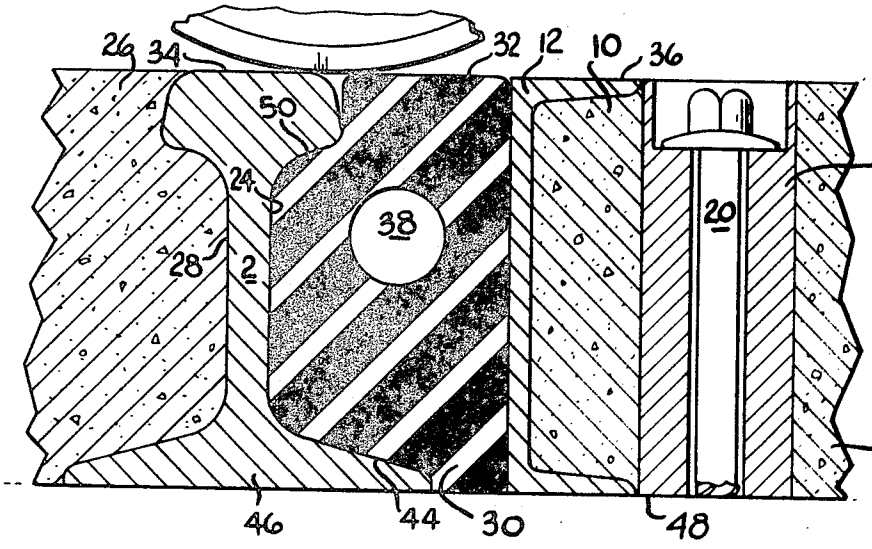
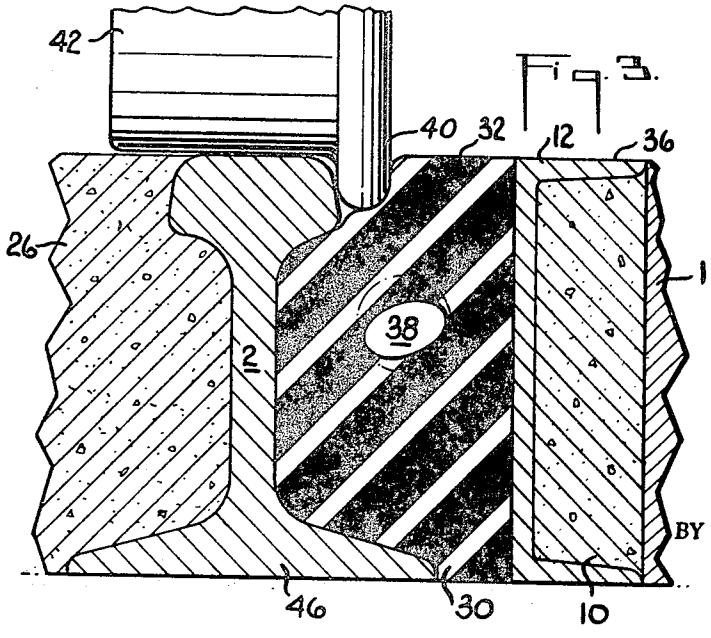


Fig. 2.

Fig. 3.



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RAILROAD CROSSING

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U.S. Cl. 238—8 2 Claims

ABSTRACT OF THE DISCLOSURE

A resilient cushioning member for a railroad track crossing providing a smooth crossing for small-wheeled, solid-tired vehicles wherein the resilient cushioning member is supported by the base flange of the rail.

BACKGROUND OF THE INVENTION

Field of the invention

This invention relates to a railroad track crossing and in particular to a new resilient cushioning member which cooperates with the railroad rails to provide a smooth, transverse crossing of the railroad track for vehicles having small diameter solid wheels.

Description of the prior art

U.S. Patent Nos. 2,835,451 and 2,950,057 describe the use of a cushioning member adjacent a railroad rail to provide smooth vehicle crossing areas for small-wheeled, solid-tired vehicles. In each of these patents, the cushioning member is supported on a separate means extending between a retaining member and the rail. It is further noted that in each of these patents a void area exists between the rail and the cushioning member, and this void area is susceptible to being filled by undesirable materials.

Summary of the Invention

It is an object of this invention to provide a resilient cushioning member which cooperates with a conventional railroad rail to provide a smooth crossing area for small-wheeled, solid-tired, or other vehicles.

It is a further object of this invention to provide a resilient cushioning member which cooperates with a conventional railroad rail to prevent the entry of undesirable material into the area between the railroad rail and the road surfacing material between the rails forming the railroad tracks.

The foregoing objects are accomplished in accordance with the instant invention by a resilient cushioning member having a transverse cross-sectional configuration which substantially coincides with the transverse, cross-sectional configuration between the railroad rail and the road surfacing material or retaining member between the rails forming the railroad tracks. Furthermore, the resilient cushioning member is designed so that it is supported by the upper surface of the base flange of the conventional railroad rail.

BRIEF DESCRIPTION OF THE DRAWING

The invention will be more fully understood and further objects and advantages thereof will become apparent when reference is made to the following detailed description of a preferred embodiment of the invention and the accompanying drawings in which:

FIG. 1 is a view in cross-section showing a preferred embodiment of the invention;

FIG. 2 is an enlarged cross-sectional view illustrating the crossing of a small-wheeled, solid-tired vehicle; and

FIG. 3 is an enlarged cross-sectional view showing the compression of the resilient cushioning member by the flange of a railroad car wheel.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawings, there is illustrated in FIG. 1, a railroad track crossing comprising a pair of rails **2** which are suitably secured in a conventional manner at spaced intervals to a railroad tie **4** having a tie plate **6** and spikes **8**. The center section by the rails **2** is filled by a slab **10** comprising a rectangular channel iron frame **12** filled with a suitable material such as concrete **14**. Preferably, the slab **10** is formed in place by placing the frame **12** in position and then pouring in the concrete. If desired, a bed of sand covered by a suitable plastic sheet between the rails **2** may be used to provide a base for the concrete. However, experience has shown that a bed of sand is not required. The channel iron frame **12** is placed between the rails **2** and secured in position on the ties **4** by a plurality of spikes **20** cooperating with the retaining members **22** secured to the frame **12**. The space within the frame **12** is then filled with a suitable material such as concrete to a level even with the upper portion of the frame **12**.

The slab **10** and particularly the frame **12** is secured in position so that a space exists between the frame **12** and the facing inner surfaces **24** of the rails **2**. The road surface **26** is formed snugly against the outer surface **28** of the rails **2** and level with the top surface of each rail **2**. The space between the frame **12** and the facing inner surface of each rail **2** is filled with a resilient cushioning member **30**. The transverse cross-sectional configuration of the cushioning member **30** substantially coincides with the transverse cross-sectional configuration of the space between the inner surface **24** of the rail **2**, the upper surface of the tie plates **6**, and the adjacent surface of the frame **12**. As illustrated in the drawings, the cushioning member **30** substantially fills the space between each rail **2** and the frame **12**. The upper surface **32** of the cushioning member **30** is substantially even or level with the upper surface **34** of the rail **2** and the upper surface **36** of the frame **12** so as to present a uniform surface to provide a smooth crossing for small-wheeled, solid-tired vehicles, or any other type of vehicle. The cushioning member **30** is provided with a longitudinally extending opening **38** to provide a space to receive that portion of the cushioning member deformed by the flange **40** of the wheel **42** of a conventional railroad car.

In the preferred embodiment of the invention, each cushioning member **30** is positioned against the inner surface **24** of its associated rail **2** and the frame **12** is then positioned between the cushioning members **30**. The space within the frame **12** is then filled with a suitable material such as concrete. If it is necessary to repair the rails, the ties, or the cushioning member, the slab **10** may be removed by removing the spikes **20** and securing eye bolts to the retaining members **30**. The slab **10** may then be lifted out of its position.

Each positioning member **30** is supported primarily by one side **44** of the base flange **46** of the rail **2**. Additionally, the cushioning member **30** is supported by the surface **48** of the cushioning member **30** contacting the upper surface of each tie plate **6**. If desired, the cushioning member may be provided with recesses to accommodate the heads of the spikes **8**. However, experience has shown that it is not necessary to provide such recesses. The total surface area of the unsupported portion of the bottom surface **48** of the cushioning member **30** between the adjacent ties is relatively small when compared with the total surface area of the cushioning member **30** which is supported by the base flanges of the rails **2** and the tie

plates 6 so that the cushioning member 30 can withstand the forces applied to it by the railroad car and the crossing vehicular traffic and still remain in the desired position. There is little or no tendency for the cushioning member to be extruded out through the relatively narrow opening between the base flange 46 and the frame 12. It is further noted that the cushioning member 30 has sufficient resistance to deformation to provide the proper surface for the crossing of small-wheeled, solid-tired vehicles and yet has sufficient resiliency to deform in response to the forces applied by the flange of the railroad car and then return to its original position. In the preferred embodiment, the cushioning member is preferably formed from rubber having a Shore durometer between about 50 and 60.

As described above, the cushioning member 30 substantially fills the space between the inner surface 24 of the rails 2 and the frame 12 so as to prevent the entry of any undesirable material into this space. Also, as illustrated particularly in FIG. 3, the configuration of the cushioning member 30 is such that there is no tendency for the displaced material to catch under the protruding portion 50 of the rails 2.

It is to be understood that all the details in the foregoing description of the invention need not be strictly adhered to and that various changes and modifications may suggest themselves to one skilled in the art, all falling within the scope of the invention as defined by the subjoined claims.

What we claim is:

1. A railroad track crossing comprising:

(a) a pair of spaced rails mounted on spaced ties and forming a guide for the flanged wheels of a railroad car,

(b) means defining a road surface between said rails with said road surface lying substantially in the same plane as the top surface of said rails,

(c) said means defining each road surface having a pair of surfaces each facing the inner surface of an adjacent rail and cooperating with said inner surface of each of said rails to define two parallel spaces,

(d) means in each of said spaces to provide a smooth, transverse crossing of the railroad track for vehicles, particularly vehicles having small diameter, solid-tired wheels,

(e) said means in each of said spaces comprising a resilient cushioning member,

(f) said cushioning member having an upper surface lying substantially in the same plane as said top surface of said rails and a transverse cross-sectional configuration similar to the transverse cross-sectional configuration of each of said spaces and substantially filling each of said space and in contact with said inner surface of each rail and said facing surface of said means defining a road surface between said rails, and

(g) said cushioning member in contact with and supported by the base flange of each of said rails.

2. A railroad track crossing as defined in claim 1 wherein:

(a) said cushioning member has a longitudinally extending opening therein.

References Cited

UNITED STATES PATENTS

1,689,278	10/1928	Crabbs	238—8
2,835,451	5/1958	Goulding	238—8
2,950,057	8/1960	Speer	238—8

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