

Nov. 5, 1963

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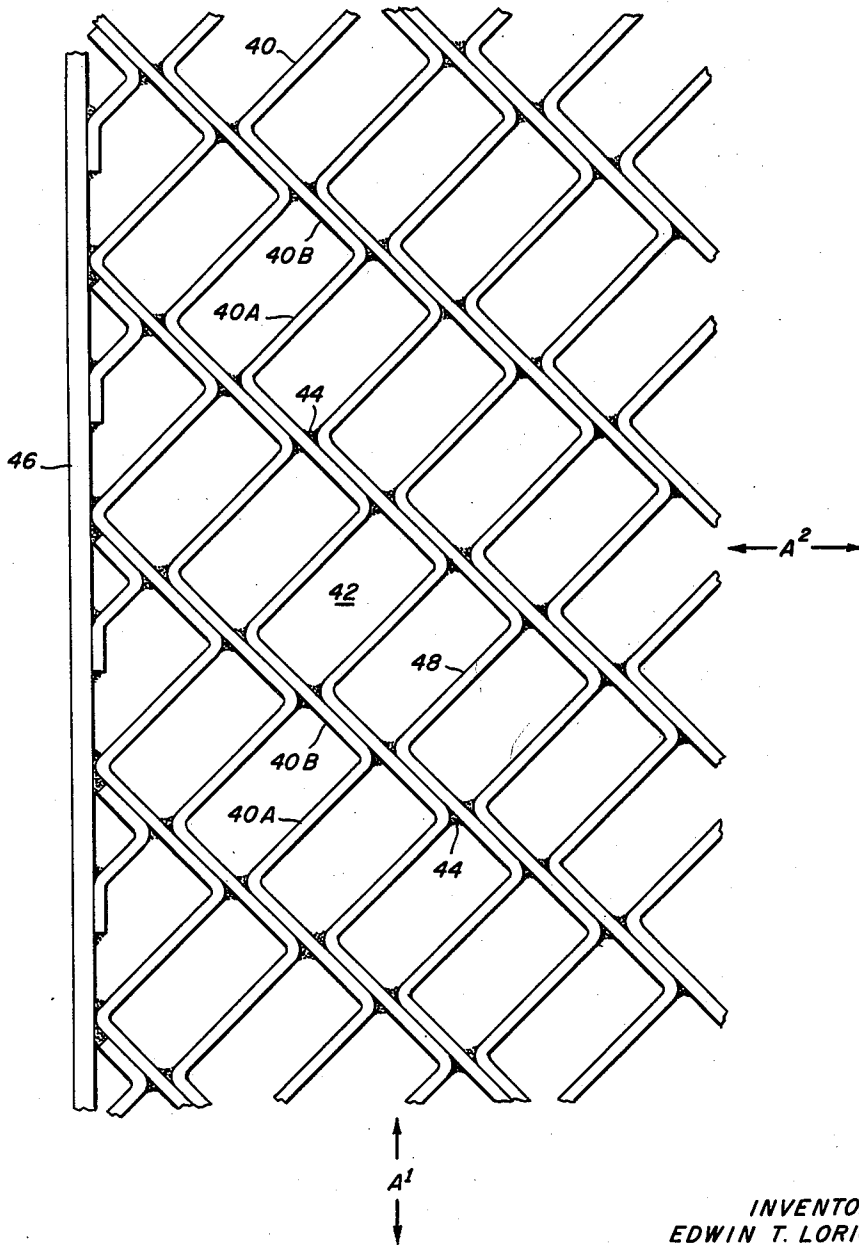
3,109,349

OPEN FLOOR GRATING

Original Filed Feb. 27, 1958

2 Sheets-Sheet 1

FIG. 1



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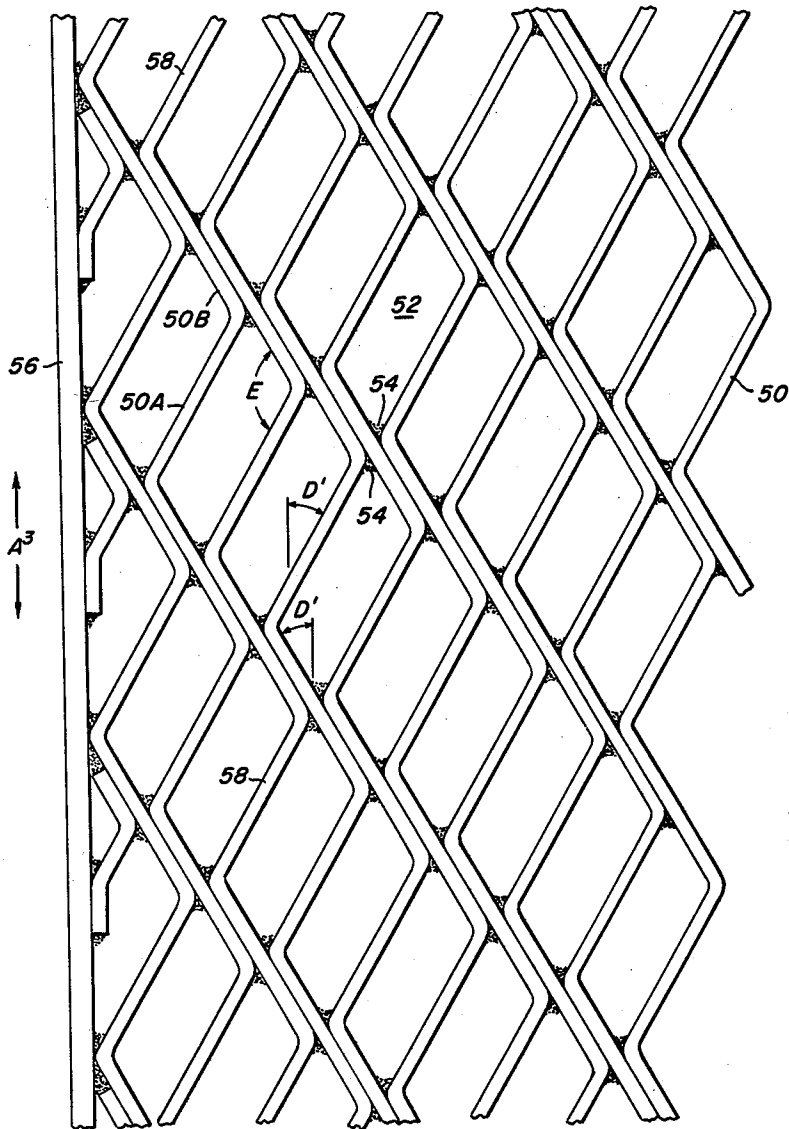
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FIG. 2



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OPEN FLOOR GRATING

Edwin T. Lorig, Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Original application Feb. 27, 1958, Ser. No. 718,011.
Divided and this application Dec. 27, 1960, Ser. No. 78,485

3 Claims. (Cl. 94—30)

This application relates to open floor gratings, particularly used on bridge roadbeds. The present application is a division of my co-pending application Serial No. 718,011 filed February 27, 1958, which in turn is a continuation-in-part of my co-pending application, Serial No. 526,233, filed August 3, 1955, and now abandoned. Gratings now in general use are constructed in such a manner that automobiles or vehicles passing thereover must do so at a relatively low speed to avoid accidents. Even at relatively low speeds automobiles tend to jump around as they pass over the open floor grating with resultant danger of skidding.

It is therefore an object of my invention to provide an open floor grating over which automobiles and other vehicular traffic can pass at relatively high speeds without danger of skidding, or loss of control due to bouncing.

This and other objects will be more apparent after referring to the following specification and attached drawings, in which:

FIGURE 1 is a plan view showing one embodiment of my invention; and

FIGURE 2 is a plan view showing a second embodiment of my invention.

Referring more particularly to FIGURE 1 of the drawings, reference numeral 40 indicates a plurality of rectangular bars which are arranged on edge in a zig-zag fashion with legs 40A and 40B of each bar being perpendicular to each other and parallel to the corresponding legs of the other bars. Legs 40A of alternate bars are in substantial alignment. Alternate legs 40B of one bar abut over substantially one-half their length with the corresponding legs of the adjacent bars and parallel legs 40B of alternate bars are welded to the opposite ends of the legs 40B of the bar therebetween, thus forming generally rectangular openings 42. Welds 44 are preferably arranged as shown. If desired an edge binding member 46 may be provided to connect the periphery of the assembled grating. If the binding member 46 is located at the side of the bridge where it will not be contacted by the tire passing thereover the top thereof may be at the same level as the top of the bars 40, otherwise it will be below the top. The grating is preferably laid in place so that the traffic will pass thereover in the direction of the arrows A¹ but if desired the grating may be laid at right angles thereto so that the traffic will pass thereover in direction of arrows A². It will be seen that this grating is made up of a plurality of rectangular bars arranged on edge welded together. Only two bars are in abutting relationship at any point. The bars form a plurality of traffic supporting surfaces 48 all of which are arranged at an angle of 45° to the direction of travel of traffic. The traffic supporting surfaces 48 are in substantially the same plane and the width thereof is less than one-fourth the width of automobile tires passing thereover.

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FIGURE 2 shows another embodiment of my invention which is quite similar to the embodiment of FIGURE 1 except that traffic must pass thereover only in the direction of arrow A³. In this embodiment a plurality of dectangular bars 50 are arranged on edge in a zig-zag fashion with legs 50A and 50B of each bar being at an angle E with respect to one another. Angle E may be between 90 and 150° but for best operation should be between 120 and 140°. Legs 50A of alternate bars are in substantial alignment and the legs of each bar are substantially parallel to the corresponding legs of the other bars. Alternate legs 50B of one bar abut over substantially one-half their length with the corresponding legs of the adjacent bars and parallel legs 50B of alternate bars are welded to the opposite ends of the legs 50B of the bars therebetween, thus forming parallelogrammatic openings 52. Welds 54 are preferably arranged as shown. If desired, an edge binding member 56 may be provided to connect the periphery of the assembled grating. If the binding member 56 is located to the side of the bridge where it will not be contacted by the tire passing thereover, the top thereof may be at the same level as the top of the bars 50, otherwise it will be below the top. The bars form a plurality of traffic supporting surfaces 58 all of which are arranged at an angle D' of between 15 and 45° to the direction of travel of traffic. However, for best operation angle D' must be between 20 and 30°. When angle D' is less than 15° there will be excessive side sway of an auto passing thereover and when greater than 45° the auto, especially the rear wheels, will bounce excessively and the welds in the grating will be subject to excessive strain. The traffic will also be noisy under this latter condition.

While two embodiments of my invention have been shown and described it will be apparent that other adaptations and modifications may be made without departing from the scope of the following claims.

I claim:

1. An open floor grating installed in a trafficway for supporting vehicular traffic comprising a plurality of zig-zag steel bars arranged on end and generally parallel to one another with their traffic supporting surfaces arranged at an angle of between 15 and 45° to the direction of travel of said traffic so that none of the traffic supporting surfaces are parallel to or normal to the direction of travel of said traffic, alternate legs of one bar abutting over a substantial part of their length with corresponding legs of the adjacent bars, said corresponding legs of alternate bars being welded to opposite ends of the legs of the bar therebetween, thereby forming generally parallelogrammatic openings.

2. An open floor grating installed in a trafficway for supporting vehicular traffic comprising a plurality of zig-zag steel bars arranged on end and generally parallel to one another with their traffic supporting surfaces arranged at an angle of between 15 and 45° to the direction of travel of said traffic, alternate legs of one bar abutting over substantially one-half their length with corresponding legs of the adjacent bars, said corresponding legs of alternate bars being welded to opposite ends of the legs of the bar therebetween, thereby forming generally parallelogrammatic openings.

3. An open floor grating installed in a trafficway for supporting vehicular traffic comprising a plurality of zig-

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zag steel bars arranged on end and generally parallel to one another with their traffic supporting surfaces arranged at an angle of between 20 and 30° to the direction of travel of said traffic, alternate legs of one bar abutting over substantially one-half their length with corresponding legs of the adjacent bars, said corresponding legs of alternate bars being welded to opposite ends of the legs of the bar therebetween, thereby forming generally parallelogrammatic openings, said corresponding legs of alternate bars being substantially in alignment.

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