

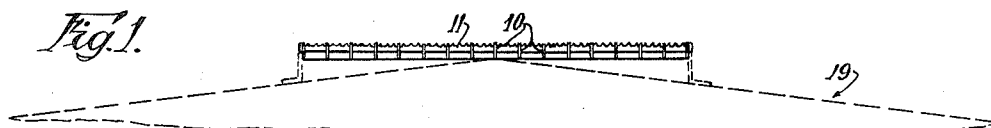
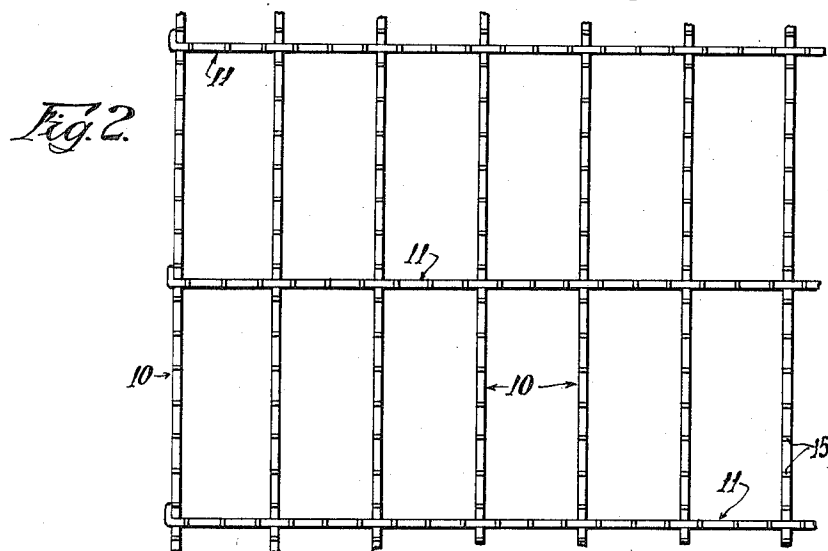
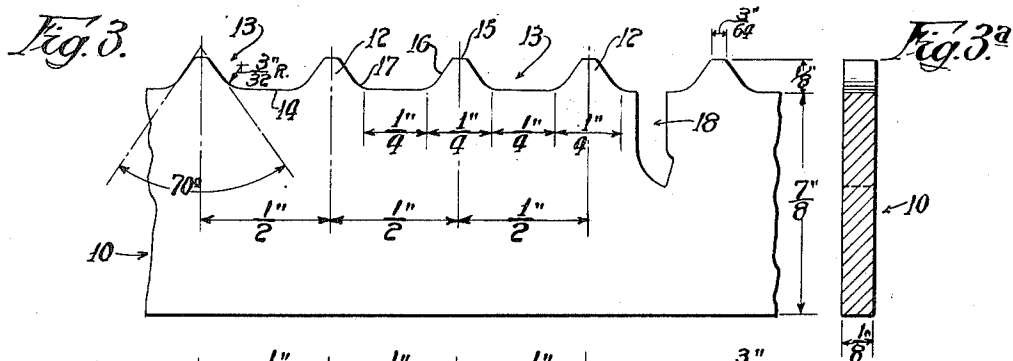
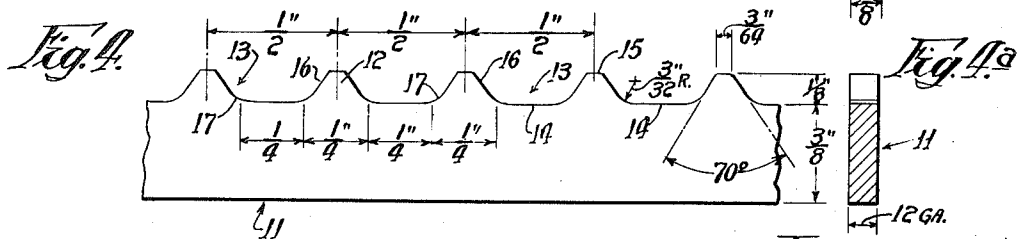
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RUNNING BOARD

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RUNNING BOARD

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4 Claims. (Cl. 105—457)

This invention relates to improvements in running boards and the like of the grating type and it consists of the matters hereinafter described and more particularly pointed out in the appended claims.

The running boards and the like with which the present invention is more especially concerned are those used upon the roof of freight cars and comprise sets of interconnected longitudinal and transverse bars, disposed vertically edgewise with serrated top portions. While running boards of the kind as now in use represent an advance in the art, they have certain objections which the present invention seeks to overcome.

In running boards of this kind, as heretofore made, the projections of the serrations are pointed so that sleet or ice will crack under the weight of the trainman on the board but such pointed projections are likely to produce serious injury, should the trainman fall upon the board or grab at the board when so falling.

As such boards are subject to all kinds of weather conditions, corrosion soon changes the contour of the projections and the depth of the recesses or gullets so that they fail to function as efficiently in breaking the sleet and ice, thus reducing the anti-slip characteristics so necessary in a device of this kind.

One of the objects of the present invention is to provide a running board of this type wherein the contour of the serrated margins of the bars is such that while ice may be cracked therefrom under the weight of the trainman upon the board, said contour remains substantially the same under progressive corrosion.

Another object of the invention is to provide a running board of this kind wherein the projections are not so apt to produce injury to the trainman falling thereupon or grabbing said bars when so falling.

Again, it is an object of the invention to provide a running board of this kind having the projections on the bars thereof, so formed that greater protection is afforded against slipping in any direction thereon so as to insure a safe footing in all kinds of weather.

Furthermore, it is an object of the invention to provide a running board of this kind, which though having a greater safety factor is less likely to cause injury in the case of a fall thereupon, and which does not cost more to produce than those of similar, but less efficient, types heretofore devised.

The above mentioned objects of the invention, as well as others, together with the advantages

thereof will more fully appear as the invention proceeds.

In the drawing:

Fig. 1 is a transverse vertical sectional view through a running board, embodying the preferred form of the invention, when in position upon the roof of a freight car, the contour line of a part of the roof appearing in dotted lines.

Fig. 2 is a top plan view of a fragment of the running board embodying the invention.

Fig. 3 is a view in side elevation substantially twice the full size scale of a fragment of one of the longitudinal bars embodied in the board.

Fig. 3^a is an end view of the bar appearing in Fig. 3.

Fig. 4 is a view in side elevation on the scale of Fig. 3 of a fragment of one of the transverse bars embodied in the board.

Fig. 4^a is an end view of the bar appearing in Fig. 4.

Referring now in detail to that embodiment of the invention illustrated in the accompanying drawing, 10 indicates the longitudinally extending bars of the board and 11 indicates the transversely extending bars of the board. The bars of both sets are disposed with their edges in vertical planes. The longitudinal bars are spaced closer together than are the transverse bars to provide a grating with the elongated openings defined by the bars arranged longitudinally of the board, as appears from the fragment of the board shown in Fig. 2. The bars of both sets are preferably made of 0.25% carbon, copper bearing steel as such steel has a good corrosive resisting action and the longitudinal bars are made from stock $\frac{1}{8}$ of an inch thick and 1 inch wide while the transverse bars are made of 12 ga. stock $\frac{1}{2}$ of an inch wide.

The top margin of the bars in both sets are serrated to provide longitudinally spaced projections 12 which are separated by gullets 13. The projections 12 and the gullets 13 of the bars in both sets thereof in this particular instance are identical in shape and dimensions, both of which are of importance as will later appear. Therefore, the parts of said projections and gullets of the bars for both sets bear the same reference numerals.

Each projection is in the form of a truncated triangle having a height approximating $\frac{1}{8}$ of an inch and which, of course, represents the depth of the gullets. The projections are spaced on half-inch centers as indicated in Figs. 3 and 4 and each has a base which is substantially $\frac{1}{4}$ of an inch in length and this length approximates

the length of the bottom 14 of the gullets. The truncated top 15 of each projection has a length longitudinally of the associated bar which approximates $\frac{3}{4}$ of an inch, so that this dimension is less than the thickness of the bars in both sets. Thus, the truncated top of the projections of both bars presents an elongated rectangular surface, with the major dimension thereof extending across the associated bar.

10 The side edges 16 of the projections are disposed at less than a right angle to each other. An angle of about 70° has been found to produce the result desired. The base end of the side edges of adjacent projections merge into the bottom 15 of the gullet, of which they define a part, by inside rounded corners 17. In this instance a radius of $\frac{3}{32}$ of an inch for said corners has been found practical not only for manufacturing purposes but for the corrosive resistance factor 20 thereof. With the side edges 16 of the projections having the angular disposition mentioned, said side edges have a length from top to bottom which approximates the length ($\frac{1}{4}$ of an inch) of the bottom of the gullets.

25 The bars 10 and 11 may be operatively secured together in several different ways, but the securing means forms no essential part of the present invention. In the present instance, the longitudinal bars 10 are provided at certain spaced 30 apart gullets with J shaped slots 18 that open through the bottom 14 of said gullets, the bottom end of the J shaped slots in adjacent bars facing in opposite directions. The cross bars 11 are then forced edgewise into the slots 18 under 35 relatively heavy pressure.

As the bottom margin of the bars 11 meets the bottom end of the slots 18, said bottom margins follow the curvature of said end of the slots and are twisted so as to be locked or wedged 40 against withdrawal. When the sets of bars have thus been assembled into the form of a grating, the truncated top ends 15 of the projections of both sets of bars are disposed in the same horizontal plane.

45 With the projections and gullets made as described, the running board fully meets the qualifications desired. The contour provided by the projections and gullets is such that the truncated ends of the projections, while sharp enough to crack or break ice or sleet therefrom under the weight of a trainman walking thereupon, are not 50 so sharp as to puncture the body of a trainman falling thereon and they are not so sharp as to lacerate the hands of a trainman grabbing said bars in a fall upon or to the roof 19 of a car to 55 which the board is applied. With the projections thus made, ample protection is afforded against the foot of the trainman slipping in any direction as the side corner edges of the projections prevent slipping sideways while the end corner edges 60 prevent a slipping forwardly or rearwardly.

Running boards of this kind are always exposed to the weather and are subject to corrosion, produced by the elements. Likewise, the 65 truncated surfaces 15 are worn down by the action of the trainmen walking thereon. Under corrosion, the bottom surface 14 of the gullets recedes gradually downwardly and the two end edges 16 of each projection recede gradually inwardly toward the vertical center line of the 70 associated projection and this recession substantially conforms to the wearing away of the truncated surfaces 15 under the action of the trainmen walking thereon. Thus, under the two actions 75 above mentioned, substantially the same

contour is maintained for the top margin of the bars in both sets although said bars may diminish in height vertically.

By reason of the use of the rounded inside corners 13 at the junction of the end surfaces 5 16 of the projections with the bottom surface of the gullets, there are no sharp square cut corners present which would favor the initiation of cracks in the structure.

Another advantage of the above construction 10 is that as substantially the same contour is maintained for the projections and gullets, the open ends of the gullets remain substantially the same under corrosion. Thus should a trainman 15 fall and should he grab at the running board to save himself from rolling off the roof, the gullets provide recesses for the fingers of the hand to enter and this without pinching or lacerating the fingers.

From the above, it is apparent that the improved board presents a safe walking surface for the trainmen regardless of weather and that the gullets remain substantially the same to furnish a good available hand hold in case of emergency and that the contour thus provided remains substantially the same regardless of corrosion. 25

The maintenance of the substantially constant depth of the gullets is also important because in this way the clearing action of the gullets remains substantially constant. 30

While in describing the invention, I have referred in detail to the form, arrangement, construction and dimension of the parts of the board, the same is to be considered only in the illustrative sense so that I do not wish to be limited 35 thereto except as may be specifically set forth in the appended claims.

I claim as my invention:

1. A running board of the open grating type embodying therein a set of spaced apart edgewise 40 disposed metal bars extending generally in the same direction, the top portions of said bars being formed to provide upstanding truncated triangular projections with gullets therebetween, each projection having end surfaces which slope downwardly and outwardly therefrom toward the base 45 of the projections to join the bottom surface of an adjacent gullet, the projections being spaced apart approximately one-half inch and also having flat-topped surfaces and the gullets between being of sufficient size to accommodate a considerable portion of the fingers of a hand whereby safe-footing anti-slip characteristics are imparted to the bars while minimizing danger of injury 50 to a person accidentally falling while thereon. 55

2. A running board of the open grating type embodying therein a set of spaced apart edgewise 60 disposed metal bars extending generally in the same direction, the top portions of said bars being formed to provide upstanding truncated triangular projections with gullets therebetween, each projection having end surfaces which slope downwardly and outwardly therefrom toward the base 65 of the projections to join the bottom surface of an adjacent gullet, the projections being each spaced apart approximately one-half inch and the angles of the faces being such that the gullets are of sufficient size to accommodate a considerable portion of the fingers of a hand, said projections also having flat topped surfaces, each 70 with an area of the general order of $\frac{3}{512}$ of a square inch, whereby the same provide good sleet-breaking safe-footing, anti-slip characteristics for the bars, under the impact of the user's 75

shoe while minimizing danger of injury to the person accidentally falling thereon.

5 3. A running board of the open grating type embodying therein a set of spaced apart edgewise
10 disposed metal bars extending generally in the same direction, the top portions of said bars being formed to provide upstanding truncated triangular
15 projections with gullets therebetween of sufficient size to accommodate a considerable portion of the fingers of a hand, each projection
20 having end surfaces which slope downwardly and outwardly therefrom toward the base of the projections to join the bottom surface of an adjacent
gullet, the projections having flat-topped surfaces each approximately $\frac{3}{4}$ by $\frac{3}{4}$ inch, so
that good safe-footing anti-slip and sleet-breaking characteristics are imparted to the bars while
minimizing danger of injury to the person accidentally falling thereon, and the spacing of the
projections being approximately one-half inch so
as to provide a safe walking surface for the train-
man.

4. A running board of the open grating type embodying therein a set of spaced apart edgewise
disposed metal bars extending generally in the same direction, the top portions of said bars being
5 formed to provide upstanding truncated triangular projections with gullets therebetween, each
projection having end surfaces which slope downwardly and outwardly therefrom toward the
base of the projections to join the bottom surface of an adjacent gullet, the included angle
10 between adjacent end surfaces of the same projection being substantially seventy degrees, the
projections being spaced apart approximately one-half inch and also having flat-topped surfaces
15 each approximately $\frac{3}{4}$ by $\frac{3}{4}$ inch and the gullets having a depth of substantially $\frac{1}{8}$ inch
whereby safe-footing anti-slip characteristics are imparted to the bars while minimizing danger
of injury to the person falling thereon.

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