Nov. 14, 1939. T. J. JOYCE ET AL 2,179,634

WALKWAY, PARTICULARLY FOR RAIL CARS

Filed Aug. 3, 1937

Fig.1.

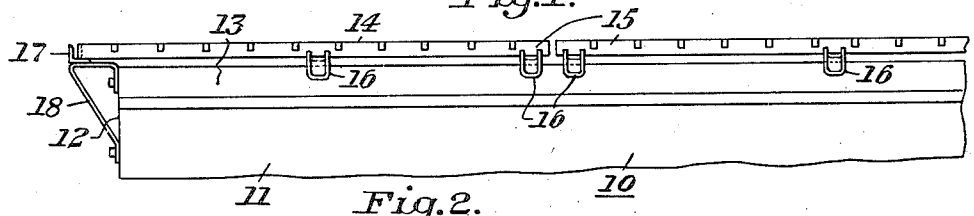


Fig.2.

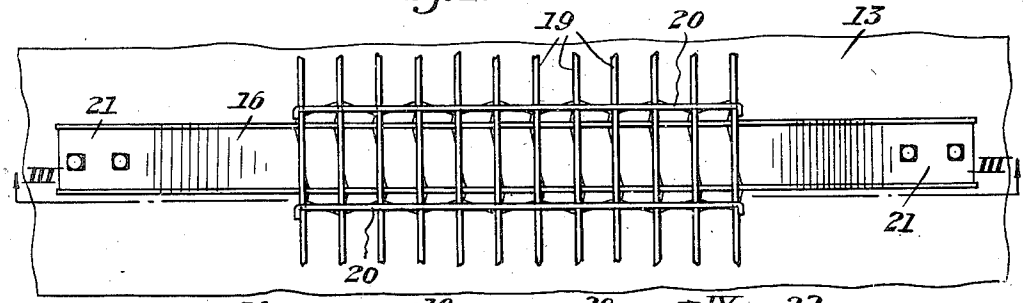


Fig.3.

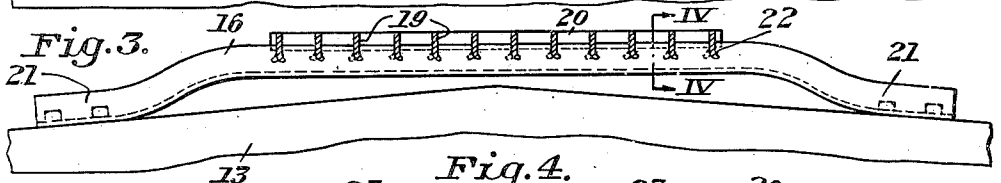


Fig.4.

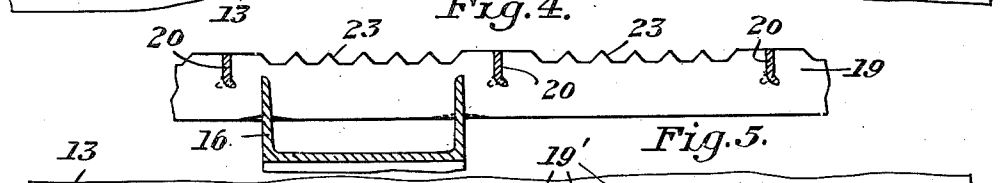


Fig.5.

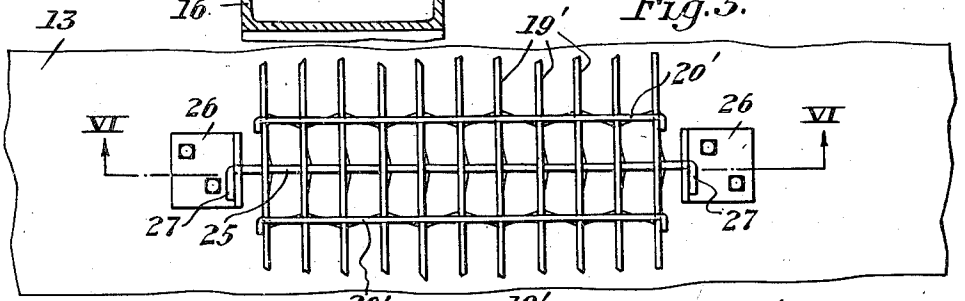


Fig.6.

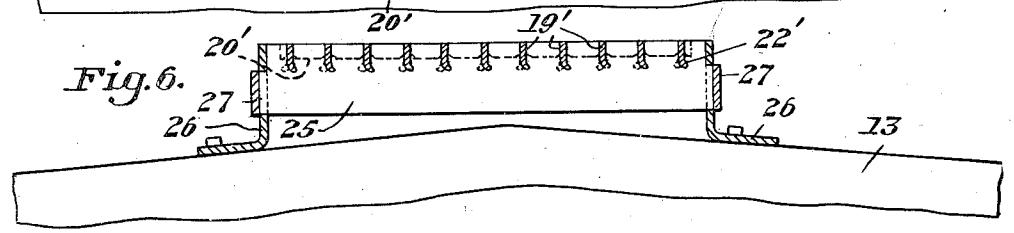


Fig.7.

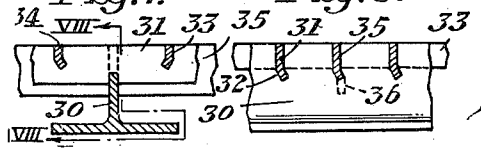


Fig.8.

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WALKWAY, PARTICULARLY FOR RAIL CARS

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Application August 3, 1937, Serial No. 157,086

3 Claims. (Cl. 105—457)

This invention relates to a running-board or walkway such as is employed on the roofs of box cars to facilitate the movement of trainmen thereover.

Running-boards have usually been constructed by securing wooden planking to wooden saddles shaped to fit over the ridge of the car roof and such construction has been widely used, despite its obvious disadvantages and various efforts to provide an improved construction. Among the disadvantages of the construction described may be mentioned the relatively rapid deterioration and the tendency to accumulate snow and ice during the winter season, both of which present a serious hazard to trainmen. While efforts have been made to provide walkways of metal grating which would avoid, to a large extent, both the relatively rapid deterioration and the snow and ice accumulation characteristic of the wooden running-board, and also walkways of metal plates, none of those heretofore proposed have been used to any considerable extent, so far as I am aware. This is probably because of the fact that they utilize bolted constructions which tend to become loose as a result of the severe vibration to which railway rolling stock is subject in operation.

We have invented a novel running-board for rail cars which obviates the aforementioned disadvantages of both the present wooden running-boards and the metal plate or grating running-boards which have been previously proposed. In accordance with our invention, we employ a grating composed of longitudinal and transverse bars which are permanently locked into an integral assembly, without the use of bolts. Supporting saddles adapted to fit over the ridge of a car roof are secured to the running-board in the same manner as the bars thereof are secured together. This provides in effect, a one-piece structure which can be secured to a car roof in any convenient manner and is not subject to loosening at the joints as a result of vibration, shock, weathering, or the like.

A preferred embodiment of the invention and modifications thereof are illustrated in the accompanying drawing to which reference is made in the following detailed description. In the drawing:

Fig. 1 is a partial side elevation of a box car having the running-board of our invention applied thereto;

Fig. 2 is a partial plan view of the running-board to enlarged scale;

Fig. 3 is a sectional view taken along the line III—III of Fig. 2, the car itself being shown in end elevation, partly broken away;

Fig. 4 is a sectional view taken along the line IV—IV of Fig. 3, illustrating an optional feature;

Fig. 5 is a view similar to Fig. 2, showing a modified construction.

Fig. 6 is a sectional view taken along the line VI—VI of Fig. 5;

Fig. 7 is a view similar to Fig. 4, showing a further modification; and

Fig. 8 is a sectional view taken along the line VIII—VIII of Fig. 7.

A box car 10 has side walls 11, end walls 12 and a roof 13. A running-board 14 extends along the roof and is composed of grating sections 15. The grating sections are supported on spaced saddles 16 in the form of channels suitably shaped. Other types of structural shapes such as angles, T's, etc., may be used as saddles instead of channels. The sections 15 adjacent the end walls 12 of the car overhang the latter and are supported on an angle 17 carried on strap iron brackets 18. This angle may be replaced by a channel such as that shown at 16, secured to the brackets 18.

As best shown in Figs. 2 and 3, the grating sections 15 are composed of longitudinal bars 19 and transverse bars 20 assembled in the manner shown in Nagin Patent No. 1,693,399, to form what is known to the trade as "Tri-lok grating." As more fully disclosed in said patent, the longitudinal bars have slots therein for receiving the transverse bars, the lower ends of the slots being canted or offset whereby to deform the lower edges of the transverse bars when the latter are pressed into the slots. The slots of adjacent longitudinal bars are canted in opposite directions so that when the grating is complete, the longitudinal and transverse bars are permanently and integrally locked together.

The saddles 16, as before stated, are composed of channels and have their ends 21 bent downwardly to engage the car roof, the mid-portion of the saddles being effective for supporting the grating sections over and above the ridge of the roof. The webs of the channels preferably have holes or slots (not shown) for the purpose of drainage. The flanges of the channels are slotted to receive the longitudinal bars 19, as shown at 22, in the same manner that the longitudinal bars are slotted to receive the transverse bars 20. Thus when the longitudinal bars are pressed into the slots of the channel flanges, the bars are slightly deformed by the oppositely directed offset lower ends of the slots, as plainly

shown in Fig. 2, and the entire grating assembly is thereby permanently secured to the saddles and the resulting structure is, in effect, unitary and integral. The slots in the channels may be made deep enough to permit peening them over the longitudinal bars after the latter have been forced therein, to prevent their removal.

The saddles 16 may be secured to the car roof in any convenient manner. If desired, the longitudinal bars 19 or transverse bars 20, or both, may be notched or serrated, as shown at 23 in Fig. 4, to provide a non-skid tread surface. Fig. 4 clearly shows the slots in the longitudinal bars 19 for receiving the transverse bars 20 and the manner in which the latter are deformed slightly as pressed in the slots.

Fig. 5 shows a slightly modified form of running-board, although it is the same in principle as that of Figs. 1 to 3. The grating section shown in Fig. 5 is composed of longitudinal bars 19' and transverse bars 20' assembled in the manner already described. The only difference between the modification of Figs. 5 and 6 and the structure of Figs. 1 to 3 is in the means for supporting the grating section above the car roof. In modification of Figs. 5 and 6, this means takes the form of bars 25 having their upper edges slotted in the same manner as the flanges of the channels forming the saddles 16. Angle brackets 26 are secured to the car roof on opposite sides of the ridge and have their vertical legs slotted to receive the ends of the bars 25. These ends are bent over after passing through the slots as shown at 27. The assembly of the parts is preferably effected before installation on the car and the longitudinal and transverse bars 19' and 20' are thereby made integral. A similar permanent union of the supporting bars 25 with the longitudinal bars 19' is likewise obtained. The slots in the bars 25 which receive the longitudinal bars 19' are indicated at 22'.

Figs. 7 and 8 illustrate a further modification in which the saddles are in the form of T-bars 30, having their ends depressed in the same manner as the channels 16. Longitudinal bars 31 are pressed into slots 32 formed in the stem of the T and are correspondingly slotted, as at 33, for receiving transverse bars 34. Certain of the longitudinal bars, such as the central and outside ones, are of greater depth than the others. The central one, for example, appears at 35 and is slotted, as at 36, to receive the stem of the T below the bottom of the slot 32 in which the bar is positioned. This locks the stem of the T against lateral deflection.

It will be apparent from the foregoing description that the invention provides a novel and highly advantageous running-board for rail cars. The grating sections are sufficiently open to prevent accumulations of snow or rain, but are sufficiently close to provide a safe tread surface. It is obvious, furthermore, that the edges of the longitudinal and transverse bars provide a safer tread, from the standpoint of skidding, than wooden planking or metal plates, even without the special non-skid edges shown in Fig. 4. The special safety feature incorporated into this running-board is that after ice or snow forms to a depth sufficient to cover the board, the tread is the first part exposed when the ice and snow melts, whereas on the other types the walking surface is exposed last. The running-board of my invention is not subject to rapid deterioration, if kept properly painted. As there are no bolted joints to loosen, vibration does not cause separation of the members, the grating bars being permanently locked together by an actual deformation of the parts thereof. The grating sections, as a whole, are just as firmly secured to the supporting saddles as the grating bars are secured to each other.

While we have illustrated grating sections composed of bars secured together in the manner disclosed in the aforesaid Nagin patent, it will be apparent that the bars may be otherwise secured together, as by welding, so long as a permanent integral union between the bars forming the grating section and between the supporting saddles and the longitudinal grating bars is obtained. Other departures from the precise details illustrated and described may, of course, be made within the principle of our invention and the scope of the appended claims. Although the invention has been described as applied to running boards for cars, it may also be used wherever a walkway is needed.

We claim:

1. A running board construction comprising a grating including longitudinal bars provided with slots, transverse bars including lower edge portions disposed within the said slots and deformed thereby so as to interlock the said transverse and longitudinal bars together, and means for attaching the said grating to a supporting structure, said attaching means including supporting members extending substantially parallel to the said transverse bars below the latter, each of the said supporting members having notches formed in its upper edge and the said longitudinal bars having portions disposed in the said notches in the said supporting members and deformed thereby so as to interlock the said grating and the said supporting members together, said attaching means also including brackets for attaching the said supporting members to the said supporting structure and each of the said brackets having an opening formed therein, and each of the said supporting members including angled end portions extended through the said openings in the said brackets so as to secure the said supporting members and the said brackets together.

2. A running board construction comprising a grating including longitudinal bars provided with slots, transverse bars including lower edge portions disposed within the said slots and deformed thereby so as to interlock the said longitudinal and transverse bars together, each of the said longitudinal bars having notches formed therein in the upper edge thereof and the said notches providing a safety tread upon and as an integral part of the said grating, and means for attaching the said grating to a supporting structure.

3. A running board comprising a grating including longitudinal and transverse bars, and spaced supporting saddles, said longitudinal bars having slots formed therein receiving the said transverse bars and deforming the lower edges of the latter so as to interconnect the said longitudinal and transverse bars together, said saddles having similar slots formed therein receiving and deforming said longitudinal bars, said saddles comprising channels disposed with their flanges extending upwardly and having their outer ends depressed to engage a supporting structure and support the mid-portion of the saddles above the said supporting structure.

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