United States Patent [19]

Hassellof et al.

[11] **3,865,049**

[45] **Feb. 11, 1975**

[54] **FLOOR LATCH STRIP FOR RAILWAY CARS**

[75] Inventors: **Donald Elmer Hassellof,** Munster, Ind.; **Cyril George Scherer,** Olympic Fields, Ill.

[73] Assignee: **Stanray Corporation,** Chicago, Ill.

[22] Filed: **May 11, 1973**

[21] Appl. No.: **359,718**

[52] **U.S. Cl.** ..... **105/376,** 105/369 A, 105/422

[51] **Int. Cl.** **B61d 17/00**

[58] **Field of Search** ..... 105/376, 368 T, 369 A, 105/422

[56] **References Cited**

UNITED STATES PATENTS

3,422,773	1/1969	Lundvall et al.	105/376
3,478,700	11/1969	Lundvall et al.	105/376 X
3,490,388	1/1970	Lundvall et al.	105/376 X

Primary Examiner—M. Henson Wood, Jr.
Assistant Examiner—Gene A. Church
Attorney, Agent, or Firm—Stone, Wagner & Aubel

[57] **ABSTRACT**

A floor latch strip for railway cars is provided with at least one continuous, open-topped, longitudinal channel which facilitates cleaning of the entire latch strip. The latch strip provides a series of spaced, transverse recesses that serve the latch keeping function and which interconnect two sides of the channel to facilitate cleaning.

6 Claims, 8 Drawing Figures

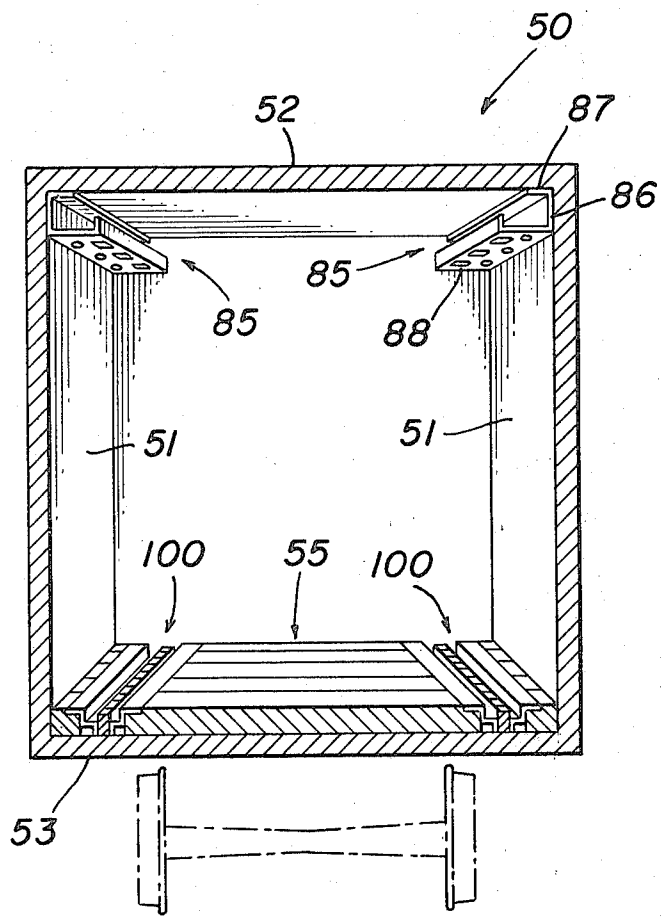


FIG. 1

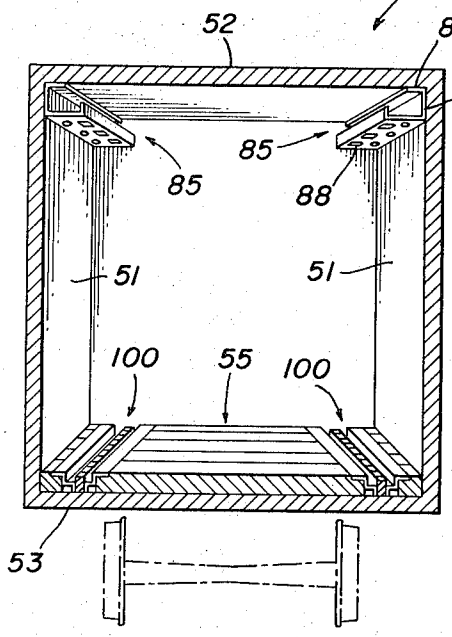


FIG. 2

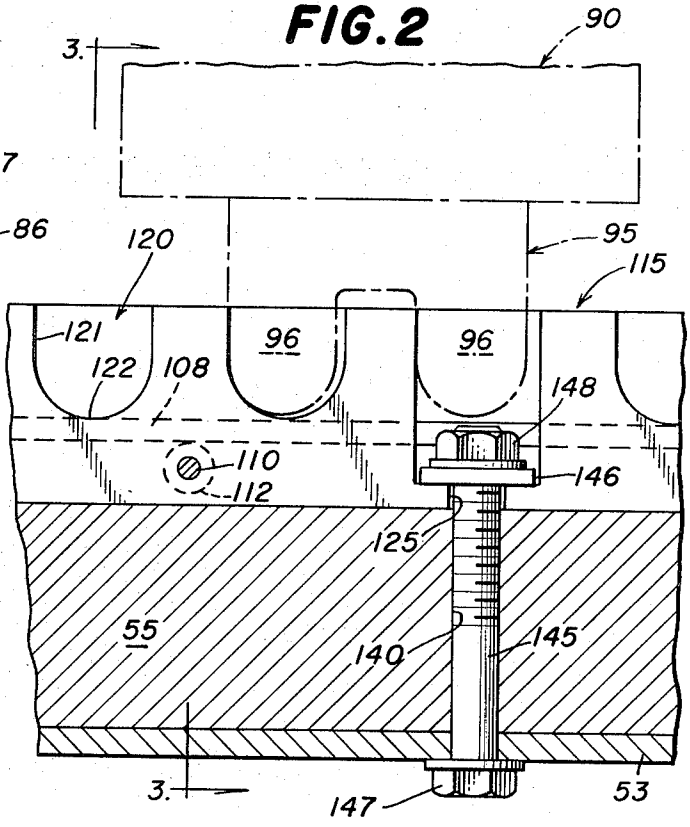


FIG. 3

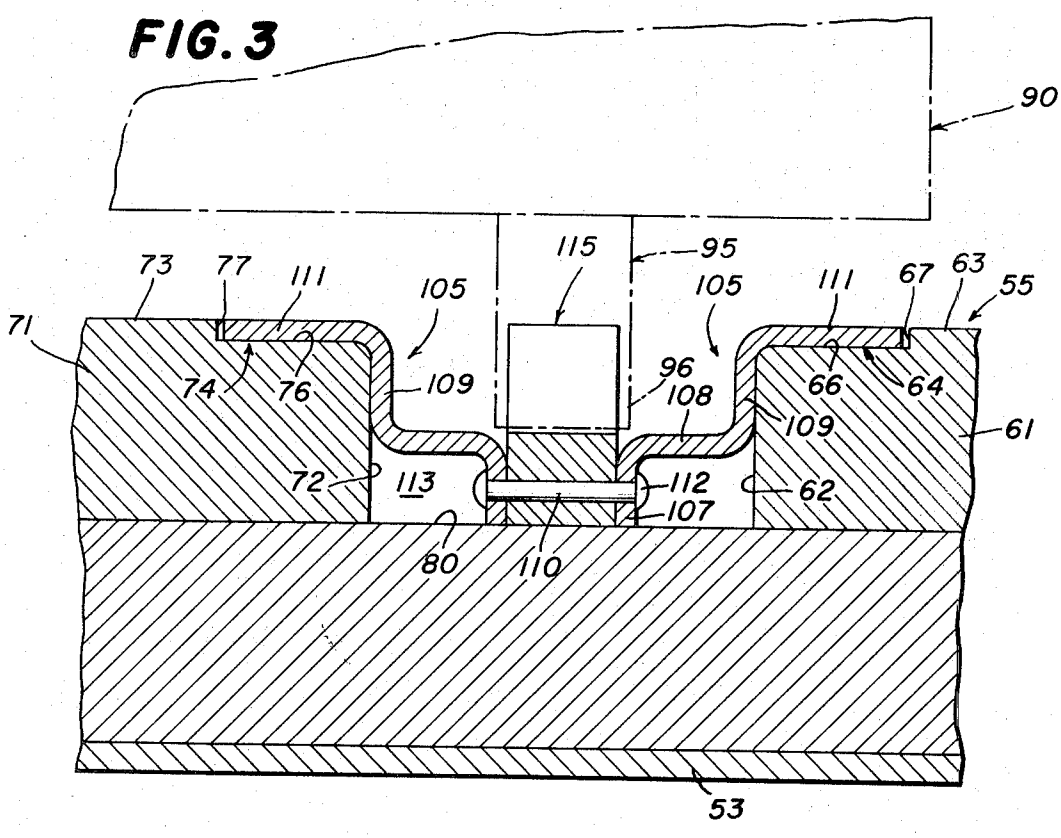


FIG. 4

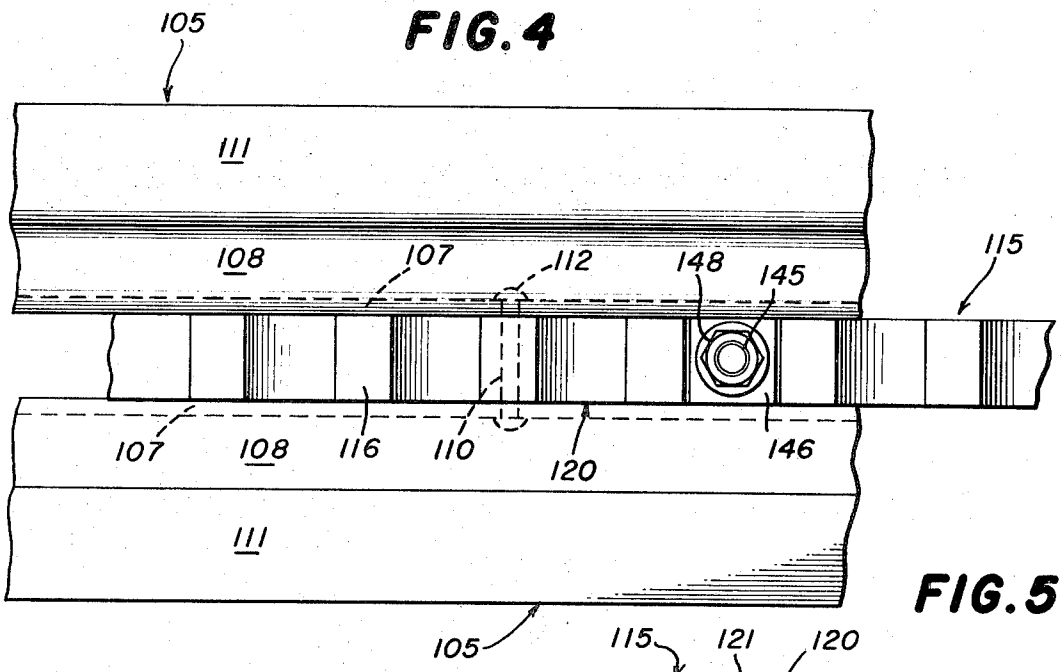


FIG. 5

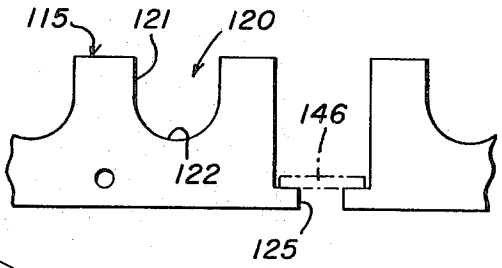


FIG. 6

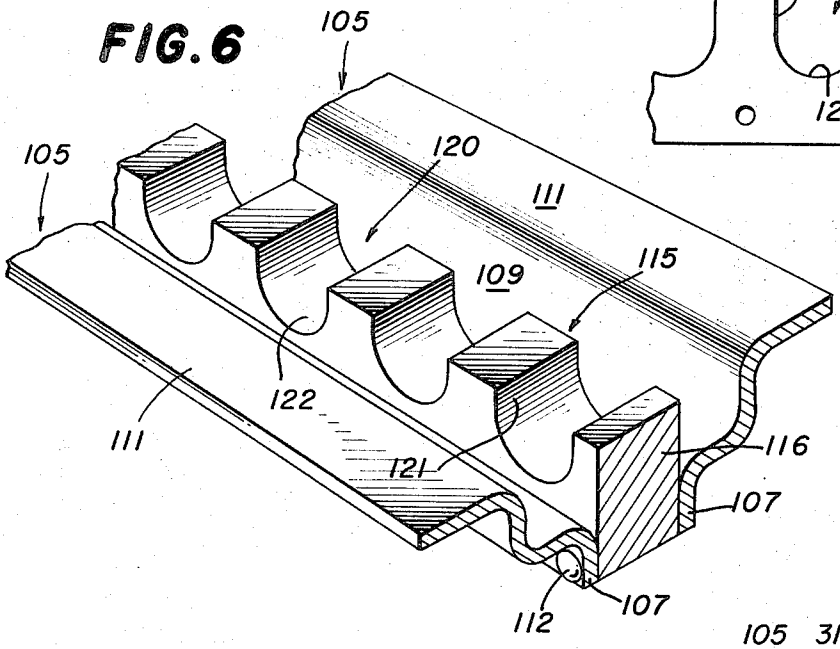


FIG. 7

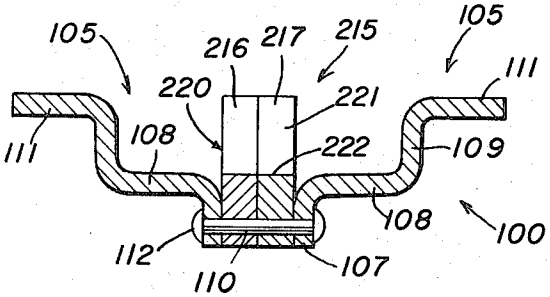
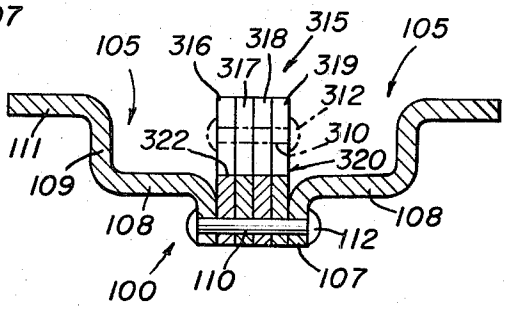


FIG. 8



FLOOR LATCH STRIP FOR RAILWAY CARS

This invention relates to a floor latch strip and more particularly to a floor latch strip wherein locking slots are provided which facilitate cleaning of the strip.

It is an important object of the present invention to provide a floor latch strip for use in a freight-carrying vehicle equipped with a lading separator carrying downwardly projecting latch elements, the floor latch strip comprising an elongated body formed of two bars each having an M-shaped transverse cross section, the bars being positioned longitudinally of the vehicle to form with the vehicle upper and lower longitudinally extending channels, a keeper fixedly secured to the two bars and extending substantially the entire length thereof, the bottom of the keeper being secured to the lower channel and sealing the lower channel from the upper channel, the keeper having a plurality of locking slots therein for cooperating with the latch elements to latch the lading separators in place, the bottom of the slots lying in the same plane as the horizontally extending surfaces of the upper channel, whereby the upper channel is readily cleanable due to the alignment of the slots with the upper channel and the lower channel is prevented from being filled with debris due to the sealing thereof by the keeper.

This and other objects of the present invention together with further objects and advantages thereof will best be understood by reference to the following specifications taken in connection with the accompanying drawings wherein:

FIG. 1 is a transverse perspective view of a railway car embodying the present invention;

FIG. 2 is an enlarged, fragmentary elevational view partly in section showing latch pins of a lading separator engaged in the floor latch strip embodying the present invention;

FIG. 3 is a sectional view of the lading separator and floor latch strip shown in FIG. 2 taken along lines 3—3 thereof;

FIG. 4 is a fragmentary top plan view of the floor latch strip shown in FIG. 2;

FIG. 5 is a fragmentary elevational view of the ends of the floor latch strip shown in FIG. 4;

FIG. 6 is a perspective view of the floor latch strip shown in FIG. 4;

FIG. 7 is a sectional view of the second embodiment of the present invention; and

FIG. 8 is a sectional view of a third embodiment of the present invention.

Referring now to the drawings, there is shown a railway car 50 having spaced apart and parallel side walls 51 interconnected by a roof 52 and a floor 53. The railway car 50 is constructed and arranged to ride on the usual truck structure shown in phantom in FIG. 1 and includes a sub-floor 55 which extends above the floor 53 and provides a load supporting surface for the railway car 50. The deck 55 is constructed of a plurality of planks extending transversely of the railway car 50 and has therein two longitudinally spaced apart channels 60. The channels 60 divide the deck 55 into two end sections 61 which lie between the adjacent side wall 51 and the respective ones of the channels 60. Each of the end sections 61 of the deck 55 has a vertically extending inner surface 62 and a horizontally extending top surface 63. A notch 64 is provided at the juncture between the top surface 63 and the inner surface 62 of the end sections 61, the notch 64 extending the longitudinal length of the deck 55 and having a horizontal bearing surface 66 and a vertical abutment surface 67. The deck 55 also includes a center section 71 intermediate the two channels 60, the center section 71 having on the sides thereof longitudinally extending inner surfaces 72 interconnected by a top surface 73. Two notches 74 are provided in the center section 71 at the respective junctures of the top surface 73 and the two inner surfaces 72, each of the notches 74 having a horizontally extending bearing surface 76 and a vertically extending abutment surface 77. Each of the two channels 60 includes a bottom surface 80 or bight interconnecting the inner surface 62 of the respective one of the end sections 61 and the adjacent inner surface 72 of the center section 71.

The railway car 50 has two tracks 85 respectively positioned in the upper corners of the railway car formed between the roof 52 and the side walls 51. Each of the tracks 85 is provided with an attachment flange 86 for attachment to the adjacent side wall 51 and an attachment flange 87 for attachment to the roof 52. A plurality of latch openings 88 extend through a horizontally disposed flange of the tracks 85 and are adapted to receive therein latch pins carried by a bulkhead or lading separator 90, all as is well known in the art. Each of the bulkheads or lading separators 90 carries at least two bulkhead latching bars 95, each having two teeth 96 extending downwardly therefrom for attachment as hereinafter will be set forth. Further, the bulkhead latching bars 95 are also provided with attachment means (not shown) for cooperation with the latch openings 88 provided in the tracks 85.

The railway car 50 incorporating the present invention has two spaced apart and longitudinally extending latch strips 100. It is understood that there are two latch strips 100 but since they are identical in construction, only one will be described herein.

The latch strips 100 are each positioned in a respective one of the channels 60 and are mounted centrally of the channels between the walls 62 and 72 of the end section 61 and center section 71, respectively. The latch strip 100 is comprised of two bars 105, each having an M-shaped transverse cross section and which extend longitudinally of the railway car 50, each of the bars 105 having a vertically extending side flange 107 which is integrally connected to a horizontally extending channel flange 108 which is integrally connected to a vertically extending abutment flange 109 which is integrally connected to a horizontally extending supporting flange 111. As seen, the two bars 105 are arranged so as to form upper and lower longitudinally extending channels with the lower channel being smaller in transverse dimension than the upper channel and centrally located with respect to the upper channel. The side flanges 107 rest on the floor 80 and form the smaller channel therebetween. Similarly, the supporting flanges 111 rest respectively in the notch 64 and the notch 74 and more particularly on the bearing surfaces 66 and 76 thereof. The bars 105 along with the deck 55 form two spaced apart longitudinally extending passageways 113 intermediate the channel flanges 108 and the floor 80 of the channel 60. The bars 105 are constructed so that the abutment flanges 109 thereof fit firmly against the inner surfaces 62 and 72 of the end sections 61 and center section 71, respectively of the deck 55, thereby to prevent debris from lodging there-

between. Similarly, the supporting flanges **111** of the bars **105** are constructed to fit firmly against the bearing surfaces **66** and **76** of the end sections **61** and the center section **71** of the deck **55**, respectively.

The latch strip **100** is further provided with a keeper **115** positioned centrally of the bars **105** and resting on the floor **80**, the keeper **115** extending along substantially the entire length of the railway car **50**. The keeper **115** is comprised of a single elongated bar **116** rectangular in transverse cross section sized to fit snugly within the lower channel formed by the flanges **107** of the bars **105**. The keeper **115** is sealingly connected to the lower channel formed by the flanges **107** by a plurality of rivets **110** having enlarged heads **112**, it being understood that the fit between the bar **116** and the adjacent one of the flanges **107** is sufficiently tight to prevent debris from falling into the lower channel.

The keeper **115** is provided with a plurality of latch notches extending transversely of the keeper **115** and in vertical alignment with a respective one of the latch openings **88** in the respective one of the tracks **85**. Each of the notches **120** has a transverse extent equal to the transverse extent of the bar **116** and includes opposed straight wall sections **121** interconnected by an arcuate wall section **122** forming the bottommost portion of the notch **120**.

An important feature of the present invention is that the bottom most portion **122** of the notches **120** lie in the same horizontal plane as the upper surfaces of the channel flanges **108**, thereby to provide communication between the two sides of the keeper **115** to facilitate cleaning of the upper channel defined by the two channel flanges **108**, and the abutment flanges **109**. Since the bottommost portion **122** of the notches **120** lie in the same plane as the upper surfaces of the channel flanges **108**, debris and the like present in the railway car **50** and lading can easily be cleaned from the latch strips **100** which is important when the lading is raw food such as natural grains and the like. Prior art devices generally positioned the keeper notches on a different plane than the exposed surfaces of the latch strip, thereby forming pockets which collected debris and were difficult to clean.

Where the latch strips **100** do not extend the entire length of the railway car **50**, there are provided end surfaces **125** of the latch strips **100** which are positioned a distance apart, one from the other, so as to accept one of the latch teeth **96** of the bulkhead latching bars **95**. Adjacent strips **100** are maintained in position by providing a hole **140** in the deck **55** which is adapted to accept a male fastener **145** having an associated nut **147**. A spacer **146** is provided intermediate the head **248** of the male fastener **145** and the outwardly extending ends **125** of the bars **105** so as to prevent debris and the like from falling beneath the deck **55**.

Referring now to FIG. **7**, there is disclosed a second embodiment of the present invention wherein a keeper **215** is constructed and arranged to fit within the flanges **107** of the bars **105** which form the latch strip **100**. In this embodiment the two bars **105** are maintained in their spaced relation by means of rivets **110** having enlarged heads **112**, all as hereinbefore described. The keeper **215** includes two elongated bars **216** and **217**, the additive width of the two bars being sufficient to provide a tight fit between the outside surfaces of the bars **216** and **217** and the inside surfaces of the adjacent flanges **107**. The two bars **216** and **217** are provided with a plurality of longitudinally spaced apart notches **220**, each of which includes a bottom portion **222** and opposed straight wall portions **221**. The bottom portion or surface **222** of each of the notches **220** lies in the same plane as the upper surfaces of the adjacent flanges **108** thereby to effect all of the advantages hereinbefore set forth.

Referring now to FIG. **8** of the drawings, there is disclosed yet another embodiment of the present invention wherein a keeper **315** is associated with the latch strip **100**. More particularly, the keeper **315** is comprised of three abutting elongated bars **316, 317, 318** and **319**. The additive width of the bars **316, 317, 318** and **319** is sufficient to provide a tight fit between the flanges **107** of the bars **105**, the keeper **315** being maintained in position by a plurality of rivets **110** having enlarged heads **112** extending through the bars **105**. Further, the individual bars **316, 317, 318** and **319** of the keeper **315** are maintained in position by a plurality of rivets **310**, each having enlarged heads **312** which maintain the bars in position as shown in the drawing. The keeper **315** is provided with a plurality of longitudinally spaced apart notches **320** constructed and arranged to provide the bottommost portion or surface **322** of each of the notches **320** in the same horizontal plane as the upper surfaces of the adjacent flanges **108**, thereby to obtain all objectives and advantages of the present invention.

While there has been described what is at present considered to be the preferred embodiment of the present invention, it will be understood that various modifications and alterations may be made herein without departing from the true spirit and scope of the present invention, and it is intended to cover in the appended claims all such modifications and alterations as fall within the true spirit and scope of the present invention.

What is claimed is:

1. A floor latch strip for use in a freight-carrying vehicle equipped with a lading separator carrying downwardly projecting latch elements, said floor latch strip comprising, an elongated body formed of two bars each having an M-shaped transverse cross section, said bars being positioned longitudinally of the vehicle to form with the vehicle upper and lower longitudinally extending channels, with the bottom of said upper channel being defined by spaced apart horizontally extending portions of said bars and said lower channel being defined by spaced apart vertically extending portions of said bars, a keeper fixedly secured to said two bars and extending substantially the entire length thereof, the bottom of said keeper being secured to said lower channel and sealing said lower channel from said upper channel, said keeper having a plurality of locking slots therein for cooperating with the latch elements to latch the lading separators in place, the bottom of said slots lying in the same plane as the horizontally extending surfaces of said upper channel, whereby said upper channel is readily cleanable due to the alignment of said slots with said upper channel and said lower channel is prevented from being filled with debris due to the sealing thereof by said keeper.

2. The floor latch strip set forth in claim **1**, wherein the uppermost portion of each of said M-shaped bars is constructed and arranged sealingly to engage the vehicle floor to prevent debris from falling on the vehicle floor below the elongated M-shaped bars.

3. The floor latch strip set forth in claim 1, wherein each of said M-shaped bars has two flanges disposed at substantially right angles one to the other, said right angle flanges being constructed and arranged to seal with a portion of the vehicle thereby to prevent debris from falling into a longitudinally extending channel formed by the two M-shaped bars and the vehicle floor.

4. The floor latch strip set forth in claim 1, wherein each of said M-shaped bars has two flanges disposed at substantially right angles one to the other, said right angle flanges being constructed and arranged to seal with a portion of the vehicle thereby to prevent debris from falling into a longitudinally extending channel formed by the two M-shaped bars and the vehicle floor.

5. The floor latch strip set forth in claim 1, wherein said keeper includes two laminated bars extending longitudinally of the vehicle and fitting within the lower channel formed by said M-shaped bars, said keeper being maintained within said M-shaped bars by means of a plurality of rivets extending through said keeper and said M-shaped bars.

6. The floor latch strip set forth in claim 1, wherein said keeper includes four laminated bars extending longitudinally of the vehicle and fitting within the lower channel formed by said M-shaped bars, said keeper being maintained within said M-shaped bars by means of a plurality of rivets extending through said keeper and said M-shaped bars.

* * * * *