This invention relates to railway cars and particularly to an improved structure for use at the doorway of box or similar freight cars and baggage cars.

Shifting of unsecured lading and heavy baggage on the floor adjacent the doorways against the doors when the cars are in transit frequently causes damage not only to the doors, but also to the lading. Various devices are provided for anchoring or bracing the lading at the doorways to prevent its shifting against the car doors, but most of these are either expensive to manufacture and install or have not given satisfactory service.

It is an object of the present invention to provide a simple and effective structure for preventing shifting of lading against the doors of baggage or box and similar freight cars.

Another object of the invention is the provision of a structure as above described which in one position serves as a threshold plate for the car doorway and in another position as a lading barrier extending vertically across the doorway to prevent shifting of lading against the door.

Still another object of the invention is to provide a two-part threshold plate for railway cars comprising a fixed part and a hinged part swingable to a vertical position extending across the doorway where it constitutes a lading barrier.

A further object of the invention is to provide a structure of the type described adapted to be releasably secured in vertical lading barrier position by retainer means lying flush with the surface of the interior wall lining of the car whereby both the retainer means and lading are protected against damage by the other.

These and other objects of the invention will be apparent to those skilled in the art from a study of the following description taken with the accompanying drawings in which:

Fig. 1 is a transverse sectional view taken through the doorway of the car, the hinged part of the threshold plate being shown in vertical lading barrier position by full lines and in horizontally extending position by broken lines;

Fig. 2 is a side elevational view taken from within the car approximately on line 2—2 of Fig. 1 and in which the threshold plate is shown by broken lines when in its raised lading barrier position extending across the doorway;

Fig. 3 is a sectional plan view of the structure taken approximately on line 3—3 of Fig. 2, showing the threshold plate in its horizontal position;

Fig. 4 is a fragmentary perspective view showing one of the retainer members in engagement with the threshold plate for releasably securing the latter in vertical lading barrier position, and Fig. 5 is a sectional plan view similar to Fig. 3, but showing the hinged threshold plate extending vertically across the full width of the car doorway where it constitutes a lading barrier.

Referring now more in detail to the drawings, the structure at the doorway is shown of a car having an angle side sill 5 and a sill reinforcing member in the form of a bulb angle 8, as is conventionally provided. Spaced channel-shaped door posts 10 are secured to the side sill 5 defining a doorway, the outer flanges of the posts having depressed lower portions secured to the vertical leg of the side sill in the usual manner, as more clearly shown in Fig. 1. The vertical leg of the side sill is cut down between the posts as indicated at 12 to provide for the doorway, as also more clearly shown in Fig. 1. Floor boards 14 extend transversely of the car and are supported on the horizontal legs of the side sills, a reinforcing and supporting angle 16 being secured to the short leg 14 of the side sill at the door opening, as is customary. It is, of course, to be understood the structure is the same at both sides of the doorway and that the car is usually provided with a doorway in both side walls of identical structure, and therefore only one side of the car and, with the exception of Fig. 5, only one side of the doorway is shown. A door sill plate 18 secured to the floor 14 in the doorway by countersunk bolts 20, which also secure the floor to the side sill structure, extends outwardly thereover and beyond the support angle 16 where it is provided at its outer edge with a downwardly turned flange 22. Additional reinforcing means for the support angle and sill plate may be provided if desired by a small angle 24 secured thereto as shown in Fig. 1. The doorway is closed by any suitable door, such as that schematically indicated by broken lines at D in Figs. 1 and 3, which may be supported by any suitable means (not shown). The structure of the car at the doorway so far described is more or less conventional, and applied thereto is the combined threshold plate and lading barrier arrangement now to be described.

The threshold plate generally indicated at 25 includes a fixed part 28 rigidly secured by countersunk bolts 20 to the car floor 14 adjacent the inner side of the doorway. Hingedly connected to the fixed part 28 by pin 32 is a swingable portion 24 of the threshold plate, the floor being recessed at 36 along the inner side of the doorway to accommodate the hinge structure.
Joining the two parts 28 and 34, which are formed with tapered outer edge portions 37 for an obvious reason. In the instance shown, an integral type hinge is provided, formed by bending the associated dovetailed edge portions of the plates 28 and 34 around the pin 32, but of course any suitable type of separate hinge element could be used for connecting these plates. The hinged part 34 of the threshold plate is thus adapted to be raised from a position extending horizontally in the doorway between the door posts to a vertical position where it serves to provide a lading barrier extending across the doorway. The hinged threshold plate is releasably secured in the lading barrier position by retainer members 38 pivotally mounted at 40 on the short inner flanges 42 of the channel door posts 10 at opposite sides of the doorway. The door posts 10 are provided with wood fillers 44 to which is secured the interior wall structure for the car comprising the lining 46 and inside finishing strips 48. As more clearly shown in Figs. 3 and 5, the lining 46 and inside finishing strips 48 are flush and project inwardly beyond the exposed inner face of the inturned flange 42 of the door posts 10. The lading barrier retainer members 38 pivotally mounted on these exposed interior post flanges 42 of such dimensions as to lie wholly within the surface plane of the interior wall lining structure where they are prevented from damaging the lading and also are protected from damage by shifting of the lading. The lading barrier retainer members 38 are formed to provide a bifurcated swinging end portion 50 adapted to straddle and engage the tapered edge portion 37 of the hinged section 34 when in operative position to releasably secure the latter vertical lading barrier position. The pivotally mounted retainer members 38 when in the inoperative or released position extend substantially vertically on the exposed inner face portion 42 of the posts 10, as shown by full lines in Figs. 3 and 5, being releasably held in such inoperative position by keeper means 54 secured to the inner face portion of the posts by bolts 56. The keeper means for the retainer members may be of any suitable or desired type, such as that shown, comprising a plunger 58 constantly and resiliently urged to engage in operative position by spring 60 mounted in a housing 62.

From the foregoing description, it will be seen that a simple and effective device has been provided for preventing shifting of unsecured lading and baggage at the doorway against the doors of the cars while in transit. During loading and unloading of the cars, the hinged part 34 of the device extends horizontally over the door sill plate 18 to provide, with the fixed part 28, a threshold plate structure, the retainer members 38 being held in inoperative position from obstructing the open doorway. Upon completion of the loading, the hinged part 34 is easily and quickly raised to vertical lading barrier position along the doorway and the retainer members 38 swing into engaging position releasably securing it there to prevent shifting of lading against the doors during transit of the cars.

The invention may be modified in various respects as will occur to those skilled in the art and the exclusive use of all modifications that come within the scope of the appended claims is contemplated.

What is claimed is:
1. In a railway car having side sills and a floor supported thereon, door posts secured to at least one of the side sills defining a doorway, a threshold plate secured to the car floor in said doorway and having a hinged portion swingable from a horizontal position extending between said door posts to a vertical position providing a lading barrier extending across said doorway, and means for releasably securing the hinged portion of the threshold plate in said vertical lading barrier position.
2. In a railway car having side sills and a floor supported thereon, door posts secured to at least one of the side sills defining a doorway, a combined threshold plate and lading barrier secured to the car floor in said doorway having a hinged portion adapted to swing from a horizontal position extending between said door posts to a vertical position where it extends across said doorway, and means on the door posts for releasably securing the lading barrier in said vertical position.
3. In a railway car having side sills and a floor supported thereon, door posts secured to at least one of the side sills defining a doorway, a two-part threshold plate comprising one part secured to the car floor at the inner side of said doorway and another first part hinged to said second part of the threshold plate and swingable from a horizontal position extending between said door posts to a vertical position extending across said doorway whereby to act as a lading barrier, and means pivotally mounted on said door posts for releasably securing the hinged portion of the threshold plate in said vertically extending lading barrier position.
4. In a railway car having side sills and a floor supported thereon, door posts secured to at least one of the side sills defining a doorway, a threshold plate secured to the car floor at the inner side of said doorway and having a hinged portion adapted to be raised from a position extending horizontally between said door posts to a position extending vertically across said doorway whereby to provide a lading barrier, and means pivotally mounted on the door posts swingable to engage said hinged portion of the threshold plate for releasably securing the latter in said raised lading barrier position.
5. In a railway car having side sills and a floor supported thereon, door posts secured to at least one of the side sills defining a doorway, a door sill secured to the car floor in said doorway extending outwardly over and beyond said side sill, a threshold plate secured to the car floor adjacent the inner edge of said door sill having a hinged portion swingable from a horizontal position overlying the door sill between said door posts to a vertical position constituting a lading barrier extending across the doorway, and retainer members pivotally mounted on the inner face of said door posts for releasably securing said hinged portion of the threshold plate in said vertical lading barrier position.
6. In a railway car having side sills and a floor supported thereon, door posts secured to at least one of the side sills defining a doorway, a threshold plate secured to the car floor at the inner side of said doorway having a hinged portion swingable from a horizontal position extending outwardly of the floor between said door posts to a vertical position constituting a lading barrier extending across said doorway, retainer members pivotally mounted on the inner face of said door posts movable from an inoperative position to an operative position engaging said hinged portion of the threshold plate for releasably securing the latter
in vertically extending lading barrier position, and keeper means for releasably holding said retainer members in inoperative position.

7. In a railway car provided with side sills and a floor supported thereon, door posts secured to at least one of the side sills defining a doorway, said posts having an exposed inner face portion, interior wall lining structure secured to the posts at the sides of the doorway and projecting inwardly beyond said exposed inner face portions of the posts, a support member secured to said side sill outwardly of the doorway, a door sill plate secured to the car floor in said doorway extending outwardly and resting on said support member, a threshold plate secured to the car floor adjacent the inner edge of said door sill plate having a hinged portion swingable between a horizontal position overlying the door sill plate intermediate the door posts and a vertically extending position to provide a lading barrier across the doorway, retainer members pivotally mounted on the exposed inner face portions of the door posts and lying within the surface plane of said interior wall lining structure, said retainer members being swingable from an inoperative position to a position engaging said hinged portion of the threshold plate for releasably securing the latter in vertically extending lading barrier position, and keeper means on the exposed inner face portions of the door posts for releasably holding said retainer members in inoperative position.

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REFERENCES CITED

The following references are of record in the file of this patent:

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<tr>
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