United States Patent [19]

Allen

[11] **3,854,425**

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[54] **END DOORS FOR AUTO RACK CARS**

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

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[52] **U.S. Cl.** ..... **105/368 R,** 105/378, 105/410, 296/148, 160/200

[51] **Int. Cl.** **B65j 1/22**

[58] **Field of Search** ..... 105/368 R, 378, 410; 296/147, 148, 155; 160/205, 200

[56] **References Cited**

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[57] **ABSTRACT**

An end wall for a multi-deck railway car comprising a pair of pivotally connected wall sections, one of which is pivotally connected to a deck inwardly of the plane of the wall so that the swinging movement of the end wall to a stored position along the side wall of the car may be accomplished between the restricted space between the hauled automobiles and a coupled railway car.

7 Claims, 7 Drawing Figures

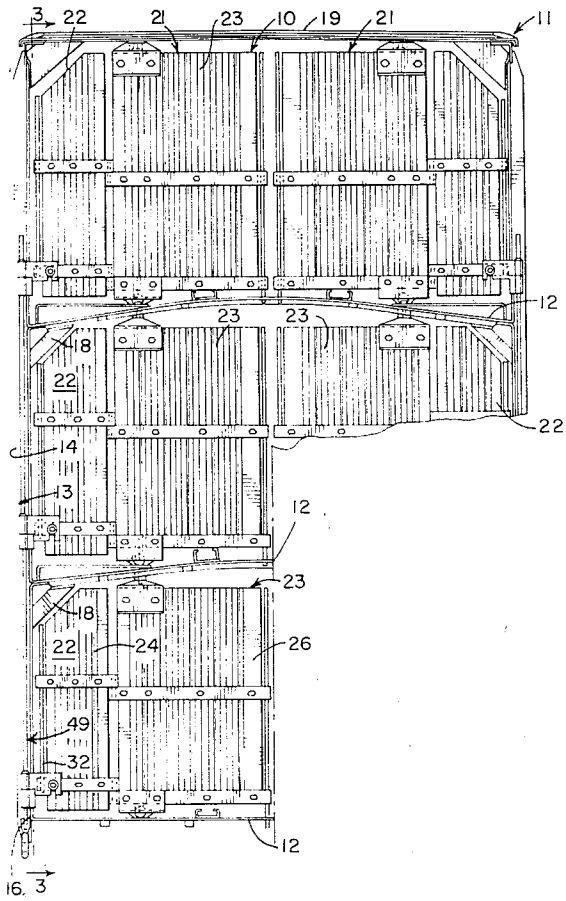


FIG. 3

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SHEET 1 OF 2

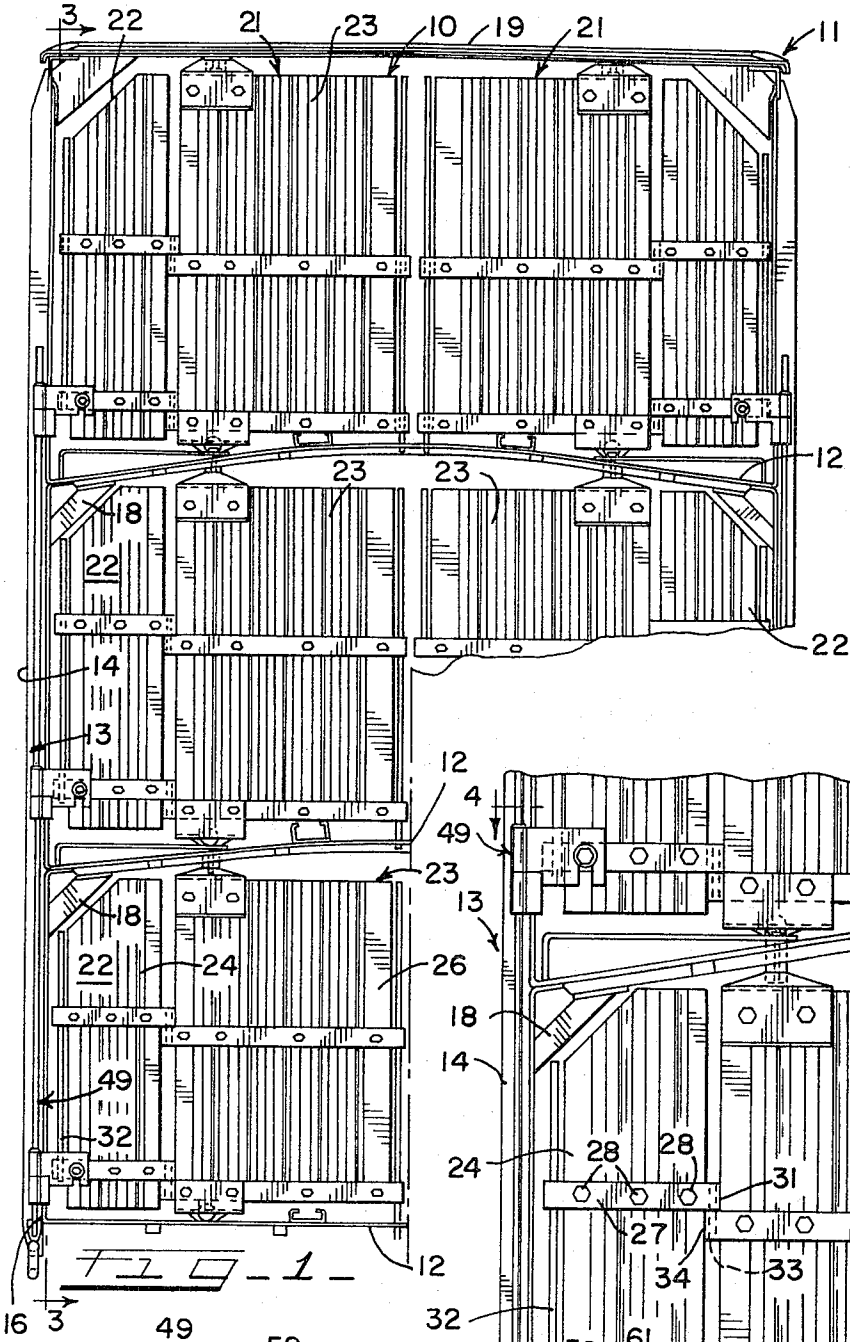


FIG. 1

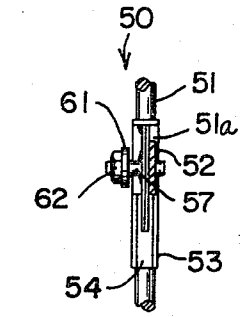


FIG. 7

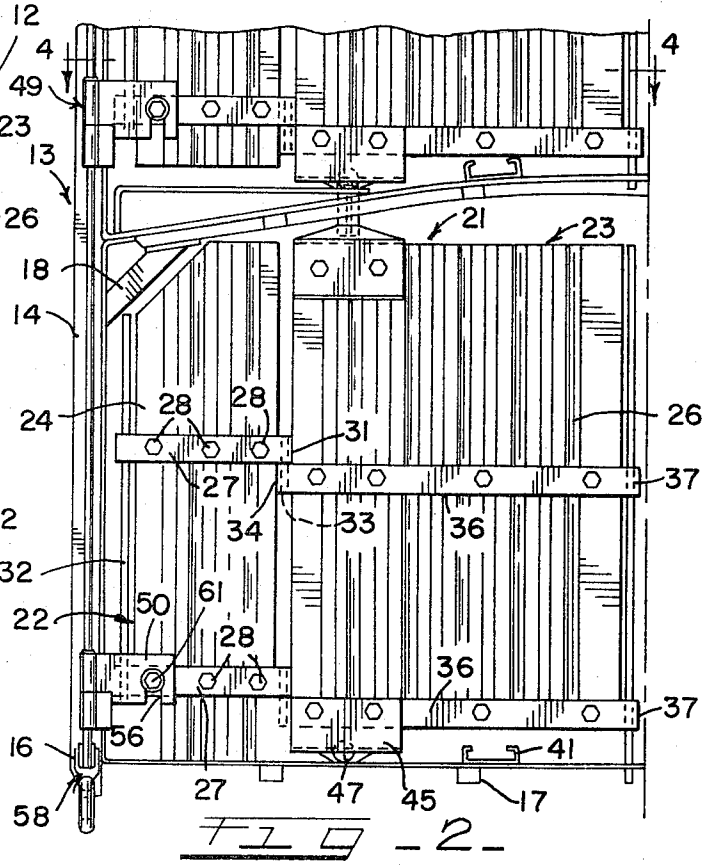


FIG. 2

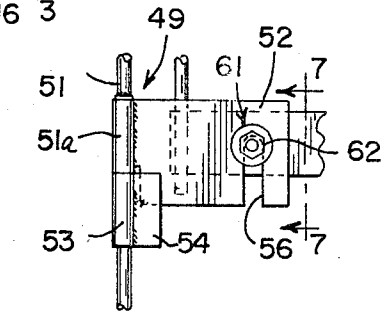


FIG. 6

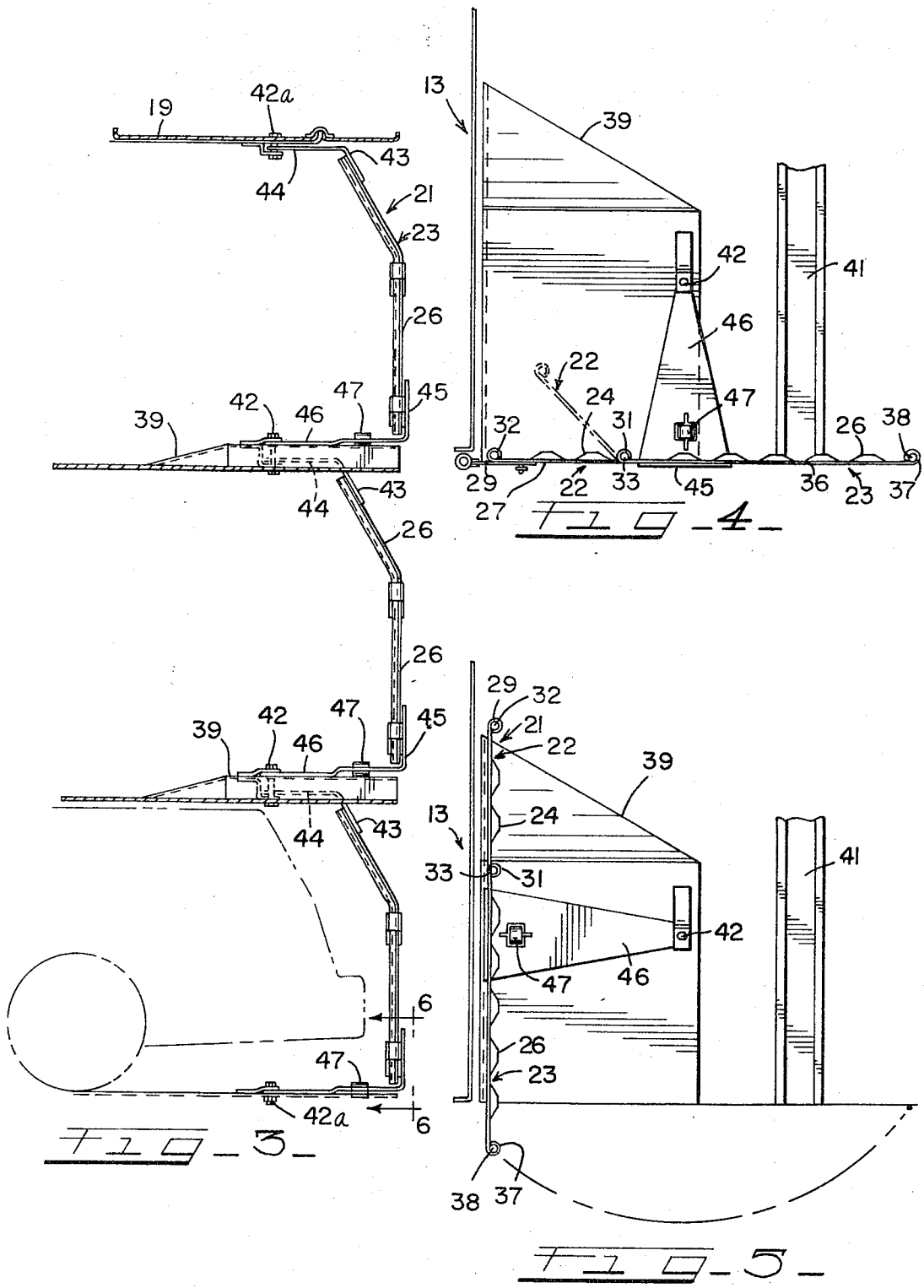


FIG. 3

FIG. 4

FIG. 5

END DOORS FOR AUTO RACK CARS

BACKGROUND AND SUMMARY OF THE INVENTION

The present invention relates to railway cars and more particularly to railway cars of the multi-deck type used for the transporting of automobiles.

These multi-deck railway cars for transporting automobiles are of open frame structure so that the automobiles are readily accessible during transport. The accessibility of the automobiles is disadvantageous because it has resulted in vandalism and theft.

To minimize this problem various types of enclosures have been applied to the railway cars. Essentially these enclosures comprise sheet metal walls and roofs which serve solely as a protective means against such vandalism and are not water or air tight. Walls are also pivoted at each end of the car. The railway cars are generally loaded at the ends. Usually such multi-deck railway cars are loaded when coupled in end-to-end relationship. The end wall must therefore be movable between an open position in the limited space between the coupled railway cars and at the same time permit access to the decks of the railway car from the ladders located adjacent the end of the railway car. Not only is the space between the coupled railway cars limited but there is limited space within the confines of the car because the automobiles are generally loaded in close proximity to the ends of the decks.

By the present invention it is proposed to provide an end wall structure for a multi-deck railway car which overcomes the difficulties encountered heretofore.

This is accomplished generally by the provision of an end wall structure for a multi-deck automobile carrying railway car generally comprising a two section movable wall including an end section which is angularly turnably connected to the other section about a vertical axis spaced inwardly from the side of the railway car. Both of the wall sections are also simultaneously turnable about a vertical pivot axis located inwardly from the end of the car. The vertical axis connecting the wall sections and the vertical turning axis about which both sections are simultaneously movable, are located so that the wall may be moved without interference between two coupled railway cars, an automobile within the car, and the side wall of the car, to a stored postion parallel to the side wall of the car.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a fragmentary end view of a multi-deck railway car including an end wall embodying the structure of the present invention.

FIG. 2 is an enlarged fragmentary end view of a wall assembly along one symmetrical side of the railway car.

FIG. 3 is a cross sectional view taken generally along the lines 3—3 of FIG. 1.

FIG. 4 is a cross sectional view taken generally along the lines 4—4 of FIG. 2 and showing the wall in its operative position at the end of the car.

FIG. 5 is a cross sectional view similar to FIG. 4 but showing the wall assembly in the stored position.

FIG. 6 is a fragmentary end elevational view of one of the latches used to maintain the wall in the operative end enclosing position.

FIG. 7 is a cross sectional view of the latch taken along the lines 7—7 of FIG. 6.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings in detail the end wall **10** of the present invention is shown applied to a railway car **11** having a plurality of decks **12**. The multi-deck railway car **11** is of substantially standard construction, including frame sides **13** including upright channels **14** which are connected at the lower ends thereof to the side sills **16** of the underframe **17**. The decks **12** are attached to the upright channels **14** in the usual manner including gussets **18**.

The top deck **12** is covered by a suitable sheet metal plate **19** as are the side walls. The sheet metal plate is intended to protect the automobiles being carried from vandalism and not primarily for structural strength.

The end wall **10** of the present invention includes a pair of wall assemblies **21** disposed on opposite sides of the longitudinal center line of the car **10**. The two wall assemblies **21** are of identical structure so that it is only necessary to describe one.

The wall assembly **21** includes an outboard section **22** and an inboard section **23** which are each formed from corrugated sheet metal to provide panels **24** and **26**, respectively. The panel **24** is suitably reinforced by horizontally disposed and vertically spaced hinge straps **27** which are suitably secured thereto by bolts **28**. The hinge straps **27** each extend beyond the vertical sides of the panel **24** and are formed with loops **29** along one side and loops **31** along the opposite side. A vertical bar **32** is suitably secured in the loops so as to serve as a handle. The loops **31** on the other end turnably receive beaded pivot pins **33**.

The pivot pins **33** are also received in the looped ends **34** of vertically spaced and horizontally disposed hinge straps **36**. The straps **36** extend across the wall section **26** and project beyond the opposite side and terminate in looped ends **37** in which a bar **38** is secured. The bar **38** also serves as a handle to move the wall. The lower end of the bar **38** projects below the deck level and acts as a stop. The lower one of the hinge straps **36** is located adjacent the bottom of the panel **26**. The straps **36** are attached to the panel or wall section **26** by means of bolts. As shown in particular in FIG. **3** the upper portion of the wall sections **24** and **26** are inclined inwardly.

Located in a housing **39** mounted on the deck outboard of the wheel guide channels **41** and outside the normal tread of the automobiles adapted to be carried thereon is a vertical pivot pin **42**. A similar vertical pivot pin **42***a* is also mounted on the lower deck **12** and the cover on the roof **19**.

Fixedly secured to the upper portion of the panel **26** is a bent plate **43** having a horizontal web **44** which is pivotally connected to the pin **42**. A right angularly bent plate **45** having a web **46** is pivotally connected to the lower one of the pivot pins **42**. A roller **47** is mounted in an opening of a slight offset portion. The roller **47** serves to facilitate the movement of the wall assembly between its stored and operative and blocking position as more fully to be explained hereinafter.

A latch assembly **49** is located along the end post of the car. The latch assembly **49** includes a plurality of latch plates **50** one for each of the wall assemblies. As shown in particular FIGS. **6** and **7** the latch plates **50** are each fixed to a vertical latch bar **51**. The latch plates **50** each include a tubular sleeve **51***a* and a radi-

ally projecting plate **52** welded thereto. A lower sleeve **53** also has a radially projecting plate **54** welded thereto, and a groove **56** which receives the lower inner corner of the plate **52.** The plate **52** has a slot **56** which fits over the shanks **57** of the bolts **61** between the head **62** and the hinge plate **27.**

The latch assembly **49** is held in the latched position by a breakable seal **58** fixed to the deck as shown in FIG. **2.**

To move the end wall, the seal **58** is broken so that the latch assembly **49** may be lifted out of engagement with the shank **57.** This permits the section **22** to be turned angularly about the pivot pins **33** relative to the section **24** to the phantom line position shown in FIG. **4.** The entire wall assembly **21** may then be turned about the pivot pins **42** to the stored position adjacent the car sidewall. The roller **47** facilitates the turning of the wall assemblies **21.** It is to be noted that the inner end of the section **24** traverses a rather shallow arc outwardly of the end of the car so that no interference occurs with an adjacent coupled car.

What is claimed is:

1. An end wall for an automobile carrying multi-deck railway car said end wall comprising an inboard section and an outboard section means pivotally connecting said inboard and outboard sections for swinging movement relative to each other about a vertical axis and means connecting said inboard section to said decks for swinging movement about an axis spaced inwardly of the end of the car between a position across the end of the car and a position along the inside wall.

2. The invention as defined in claim **1** wherein said outboard section is of lesser width than said inboard section.

3. The invention as defined in claim **1** wherein said inboard and outboard sections are each made from a corrugated sheet material.

4. The invention as defined in claim **1** wherein means on said innermost side of said inboard section prevent said innermost section from swinging into the end of said car.

5. The invention as defined in claim **4** wherein latch means engageable with said outer inboard section prevent swinging movement of said outer section.

6. The invention as defined in claim **5** wherein said latch means includes a breakable seal.

7. An end wall for a multi-deck railway car, said end wall comprising an outboard wall section and an inboard wall section in side by side relationship, means pivotally connecting said inboard and outboard wall sections for pivotal movement relative to each other and means pivotally connecting said inboard section to said car for swinging movement so that said inboard section and said outboard section are both movable between a position across the end of the car and a stored position along the inner side of one of the side walls of the car.

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