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Van Der Sluys et al.

[11] **3,754,515**

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[54] **CONNECTION PASSAGE BETWEEN RAILWAY PASSENGER CARS**

[75] Inventors: **William Van Der Sluys**, Crown Point, Ind.; **Thomas J. O'Neill**, Evergreen Park, Ill.

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

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[52] **U.S. Cl.**..... **105/8**, 105/21, 105/458

[51] **Int. Cl.**..... **B60d 5/00**, B61d 17/20, B61d 49/00

[58] **Field of Search** 105/8, 10, 21, 458

[56] **References Cited**

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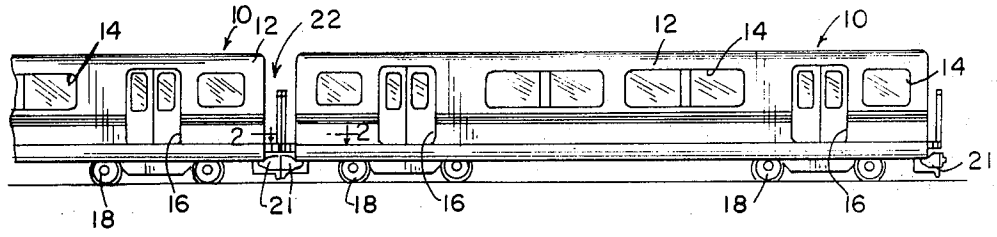
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Primary Examiner—Gerald M. Forlenza
Assistant Examiner—Howard Beltran
Attorney—Hilmond O. Vogel and James J. Conlon

[57] **ABSTRACT**

A safety gate connecting passage structure positioned at the end sill area of a railway passenger commuter vehicle and including a pair of spaced vertically extending face plate members aligned with a pair of similarly disposed face plate members on the adjoining passenger vehicle to thereby channel and direct passengers in their movement between cars.

4 Claims, 8 Drawing Figures



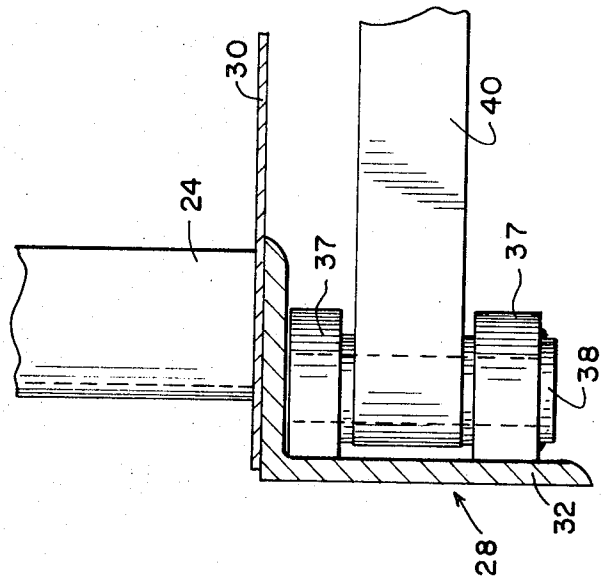


FIG-3-

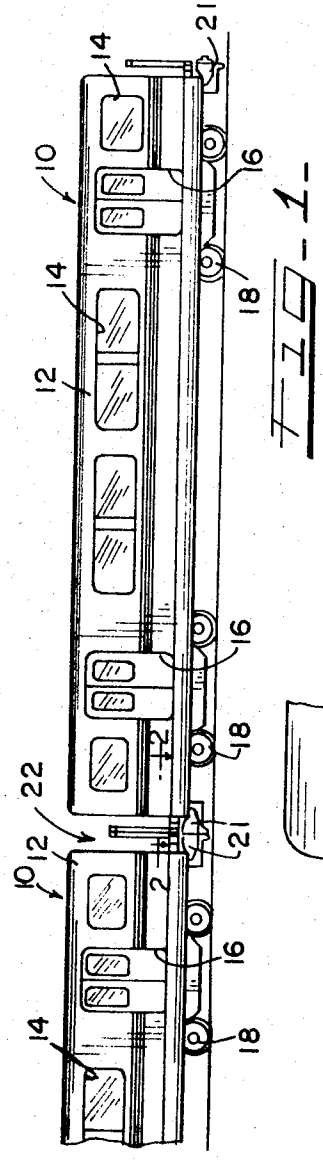


FIG-1-

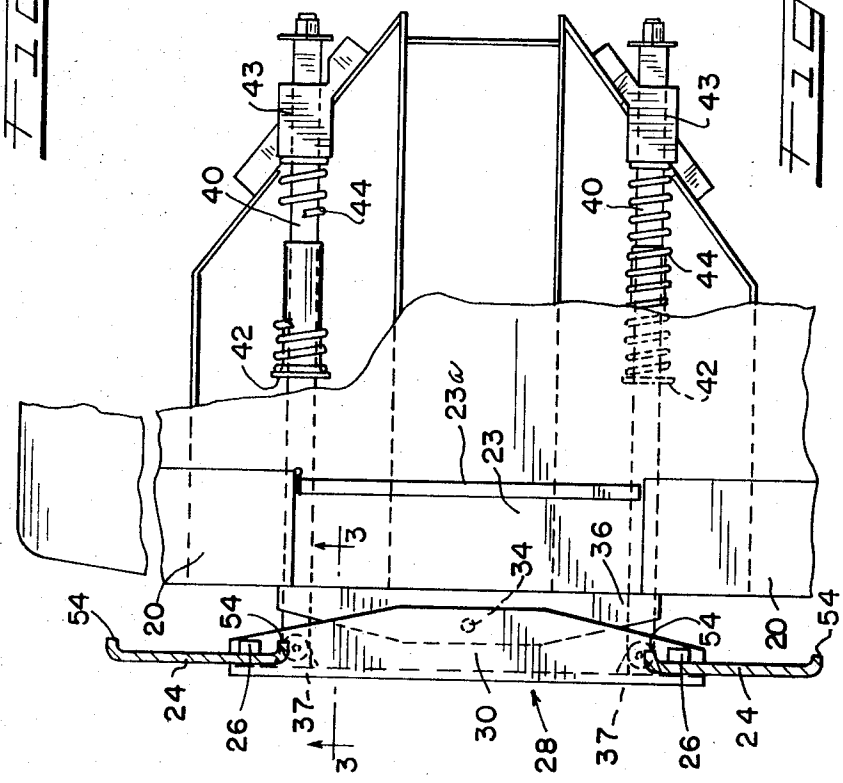


FIG-2-

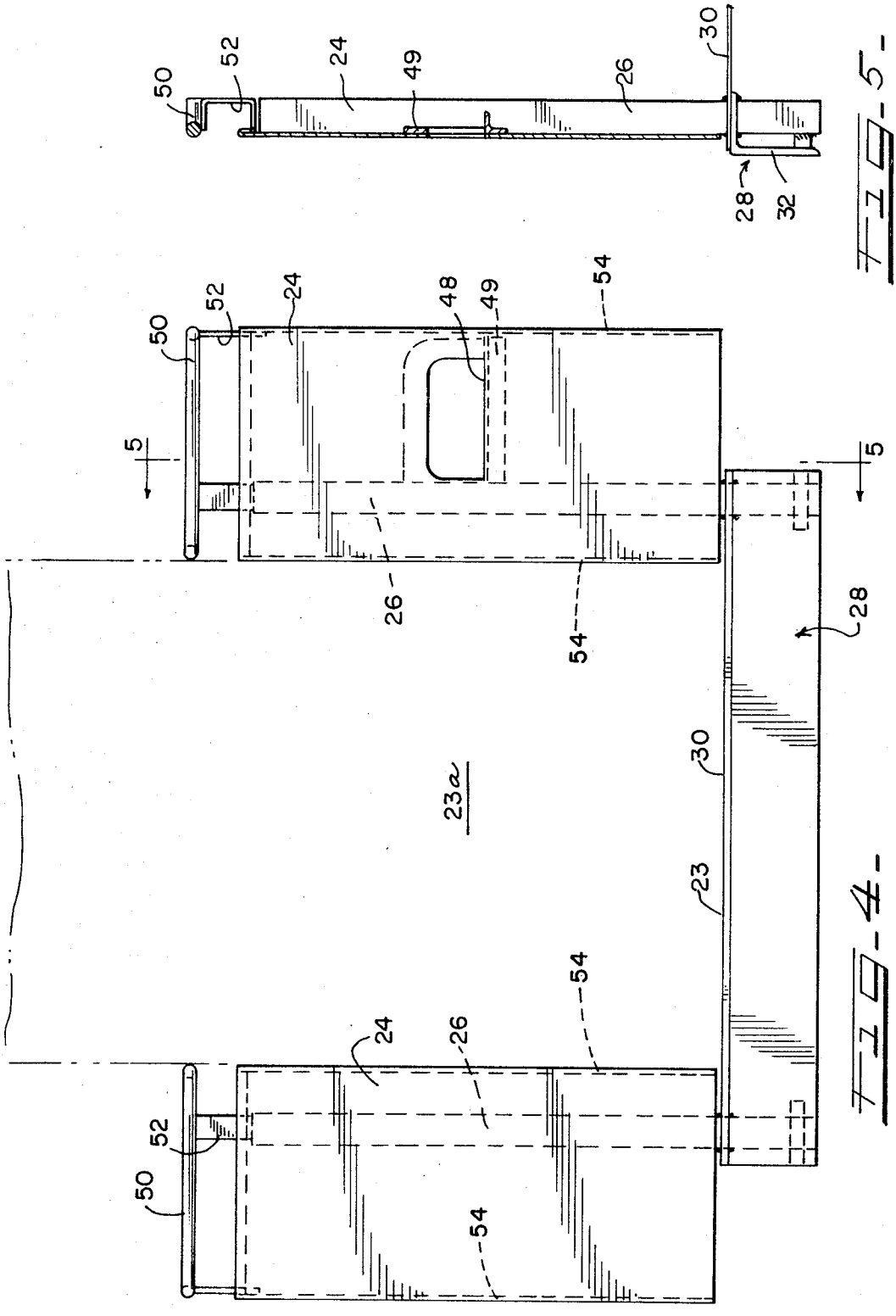


FIG. 5

FIG. 4

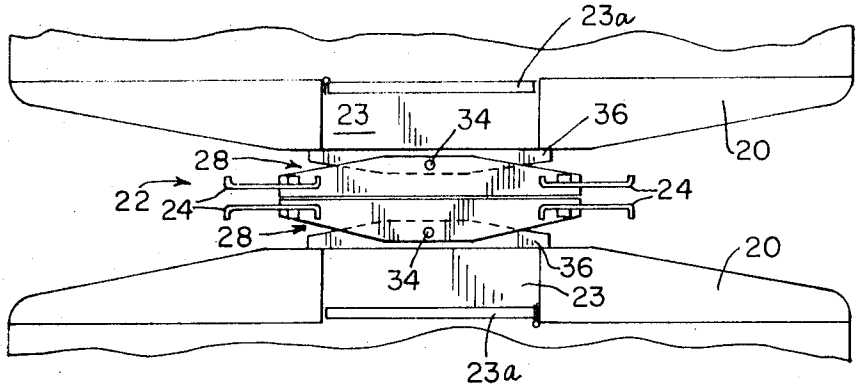


FIG. 6

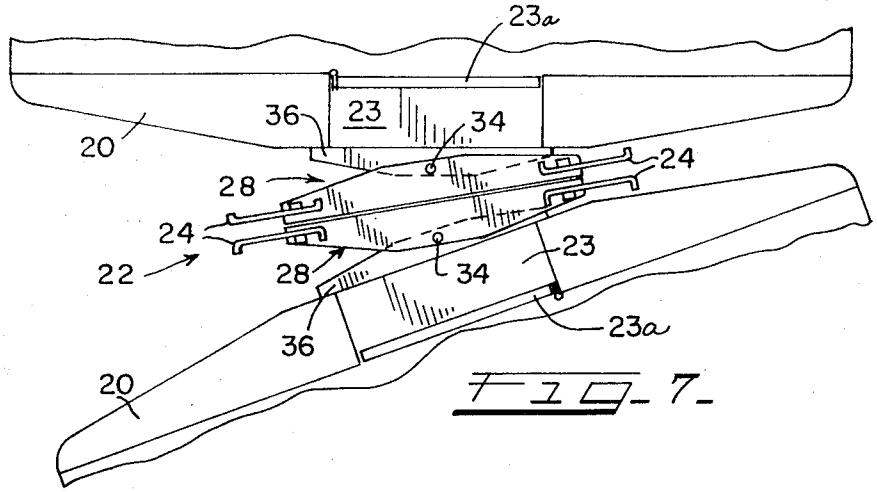


FIG. 7

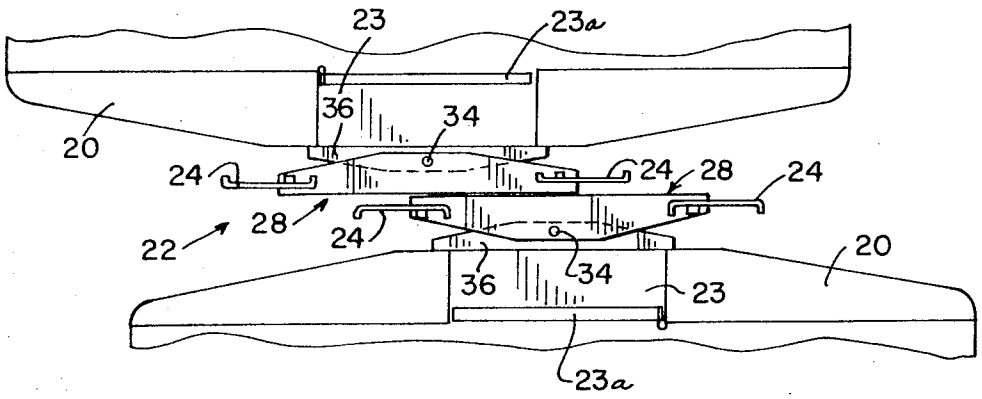


FIG. 8

CONNECTION PASSAGE BETWEEN RAILWAY PASSENGER CARS

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention pertains to railway passenger vehicles and in particular to the corridor type of structure which guides passengers during movement between adjoining cars.

2. Description of the Prior Art

Prior art corridors or devices for channeling passengers between commuter cars have consisted of chains or cable members or other types of flexible connectors attached to each car to guide passengers and provide a safety feature to prevent their falling between the cars. The problem with these devices has been the undesirability of requiring a manual operation to connect the cable or chain members to each car. This manual connection has been eliminated by the design involved in the present invention.

SUMMARY

The nature of the invention disclosed herein is directed to a means for efficiently guiding passengers in their movement between adjacent vehicles of a passenger train having individual car units wherein passage between adjacent vehicles is not generally contemplated but must be provided for in case of emergencies or necessity.

In operation on a railway vehicle, the safety gate forms a skeletonized corridor consisting of spaced plate members extending vertically upwardly from the abutting car buffer plate assemblies and said plates are positioned to remain in an adjacent generally opposed relationship as the railway vehicles traverse a variety of curves and lateral deflections. The safety gate is operative upon coupling of the railway vehicles and does not require any manual positioning or connecting to become operative.

It is an object of the present invention to provide a safety gate or corridor arrangement between adjacent passenger vehicles which is operative upon coupling of the vehicles to safely channel passenger movement between adjoining cars.

It is another object of the present invention to provide a safety gate mounted adjacent the end sill of a railway passenger vehicle including vertically extending plate portions abutting adjacent plate portions of the adjacent railway vehicle and having said plate portions remain generally opposed to effectively guide passengers in their movement between the railway vehicles.

These and other objects of the invention will become apparent from reference to the following description, attached drawings and appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevational view of railway passenger vehicles employing the present invention;

FIG. 2 is a sectional view taken along line 2—2 of FIG. 1 with portions removed for clarity;

FIG. 3 is a sectional view taken along line 3—3 of FIG. 2;

FIG. 4 is an end view of a railway passenger vehicle showing in particular the safety gate members;

FIG. 5 is a cross sectional view taken along line 5—5 of FIG. 4;

FIG. 6 is a top plan view with portions removed of a pair of coupled railway vehicles showing the alignment of the safety gate;

FIG. 7 illustrates a pair of railway vehicles and the associated safety gate configuration as the vehicles would be aligned traversing a curve; and

FIG. 8 is an illustration of a pair of railway vehicles showing the alignment of the safety gate when the cars are transversely displaced.

DETAILED DESCRIPTION

Referring now to the drawings and in particular to FIG. 1, it is noticed there is a commuter vehicle 10 of the standard construction having a body portion 12 having the usual windows 14 and door openings 16 for movement of passengers to and from the vehicle. The body portion 12 rides on spaced wheeled truck members 18 which may be of a generally known design and construction. Couplers 20 are located at each end of all the cars to provide for a secure and somewhat flexible connection between cars to allow for relative movement between the cars during longitudinal movement and when traversing curves.

The open area between adjacent vehicles and above the couplers 20 is designated by the numeral 22 and will be referred to as a passageway. A vehicle doorway is designated by the numeral 23 and defines an area where passengers move from a car interior to the passageway between the cars, and the doorway generally includes a door member 23*a*.

FIG. 2 best illustrates the typical safety gate arrangement involved in the present invention and shows a pair of spaced gate members 24 spaced across the doorway 23 and fixedly attached to a support post member 26 which is mounted on the buffer plate assembly 28. This buffer plate assembly includes a top cover plate 30 which is welded to a buffer angle member 32. This buffer plate assembly 28 is pivotally attached at the pivot pin 34 to the end sill extension 36 which spaces the buffer plate assembly 28 from the end sill 20 to thereby afford a greater degree of rotational angularity to the buffer plate assembly. On the underside of the buffer angle 32 are positioned lug members 37 having an internal bore or opening which contains a restraining pin member 38 to thereby form a pivotal connection between the stabilizing arm 40 and the buffer plate assembly 28.

This mechanism for aligning the buffer plate assembly 28 is best illustrated in FIG. 2 and is well known in the railway art. The stabilizing arms 40 extend under the car and are connected to stop members 42, 43 which are fixedly attached to the vehicle underframe. Positioned concentric with the arms is a coil spring or other type of resilient device which compresses as the stops 42, 43 are moved closer together to thereby develop a return force to maintain the buffer plate assembly parallel to the end of the car when the misalignment has been removed. Since the gate portions 24 are fixedly attached to the buffer plate assembly 28 they too will be maintained in correct alignment by the biasing force applied by the spring 40.

The gate members 24 as illustrated in FIGS. 4 and 5 may include a cutout portion 46 which forms a step and is reinforced around its periphery by plate members 49 and may be utilized, for example, by a maintenance man desiring to go on top of or on the roof of the vehicle. The hand rail member 50 functions as a second

step in this ladder and also provides a point of stabilization for a person moving between vehicles to grasp during his passage. The hand rail **50** is generally a round bar member to provide a smooth surface spaced from the top of the channel shaped member **24** and mounted on offset type of brackets **52** as best illustrated in FIG. **5.** The gate portions **24** include flanged or turned over edge portions to provide a generally U-shaped channel safety gate cross section having required strength and rigidity.

OPERATION

FIGS. **6** through **8** which illustrate a few common car positions are intended to illustrate the corresponding positions of the gate members during this car misalignment or relative displacement and are intended to indicate how the safety gates would safely channel passengers between adjacent vehicles. FIG. **6** shows the common configuration of two passenger vehicles moving in a straight line and having relatively little transverse displacement between adjacent cars. In this configuration the gates **24** would be in alignment and opposed to each other and generally define the sides of the passageway between adjacent vehicles to prevent passengers from falling between the vehicles.

The illustration of FIG. **7** discloses a car configuration during a right turn on a track portion. As indicated, there has been angular displacement between the longitudinal center lines of the vehicles; however, there has been no transverse displacement and therefore the buffer plates will remain in generally complete face-to-face contact in opposed relationship to continue forming a passageway to direct passengers between vehicles.

As illustrated in FIG. **8,** when a transverse displacement occurs between adjacent vehicles the longitudinal center line of the car will no longer be in alignment and there is a transverse displacement. During this condition there is an associated transverse displacement between the buffer plate assemblies and their associated gate portions **24.** It is a purpose of the design to define a corridor for a passenger moving between adjacent vehicles during this transverse displacement, and also block off other courses of passenger movement which could result in injury to the passenger. Thus a passenger moving through the doorway **23** of the vehicle in the lower portion of the drawing in FIG. **8** would move generally in an upwardly diagonal path to his left when passing into the vehicle illustrated in the top portion of the illustration in FIG. **8.** During this movement the only area generally open and defining a corridor is the desired path between the passageway and all other areas of movement are effectively blocked off by the positioning of the safety gate members **24.**

Thus it is noticed by the above description that the safety gate corridor involved in the present invention provides a method of channeling passenger movement between adjacent vehicles efficiently and safely without the use of cables or chains or other types of flexible members which require manual attachment to adjacent vehicles prior to their use.

The foregoing description and drawings merely explain and illustrate the invention and the invention is not limited thereto, except insofar as the appended claims are so limited, as those skilled in the art who have the disclosure before them will be able to make modifications and variations therein without departing from the scope of the invention.

What is claimed is:

1. A railway passenger vehicle having a body unit riding on and supported by spaced wheel and truck units, said body unit including spaced end door members and spaced transversely extending end sills, a corridor passenger channeling device for guiding persons between adjacent vehicles, the improvement comprising:

an end sill including an extension portion extending horizontally outwardly of the end sill,

a buffer plate assembly pivotally attached to said end sill extension and having a contacting face portion adapted to contact an associated buffer plate of an adjacent passenger vehicle,

passenger safety gate means including guide members mounted on said buffer plate assembly and spaced each side of said car door,

said guide members having portions extending upwardly of said pivotable buffer plate assembly and spaced rearward of the contacting face portion of the buffer plate assembly to thereby provide a spacing between adjacent guide members of coupled cars.

2. The invention according to claim **1,** and:

each guide member comprising a channel shaped member having depending side flange portions extending away from the contacting face portion of said buffer plate assembly.

3. The invention according to claim **1,** and:

each guide member having a hand rail means mounted atop thereof.

4. The invention according to claim **1,** and:

biasing means pivotally attached to said buffer plate assembly and including laterally spaced drive arms extending longitudinally inwardly of said vehicle;

stop means fixedly attached to said vehicle and said drive arms and said vehicle attached stop means having an opening receiving the associated drive arm;

biasing coil spring means mounted about said drive arms between the stop means to provide a restoring force to the buffer plate assembly as the drive arms reciprocate inwardly of the vehicle through the opening of the vehicle mounted stop means.

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