United States Patent

[11] 3,595,176

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Chicago, Ill.

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[54] **ADJUSTABLE AUTOMOBILE FRAME LOADING SYSTEM**
12 Claims, 12 Drawing Figs.

[52] **U.S. Cl.** ..... **105/367,** 105/366 D, 105/369 A, 214/10.5
[51] **Int. Cl.** **B60p 7/08,** B61d 45/00
[50] **Field of Search** ..... 105/366 A, 366 D, 367, 368 T, 369 A; 214/10.5; 280/179, 179.1; 248/119, 361 A

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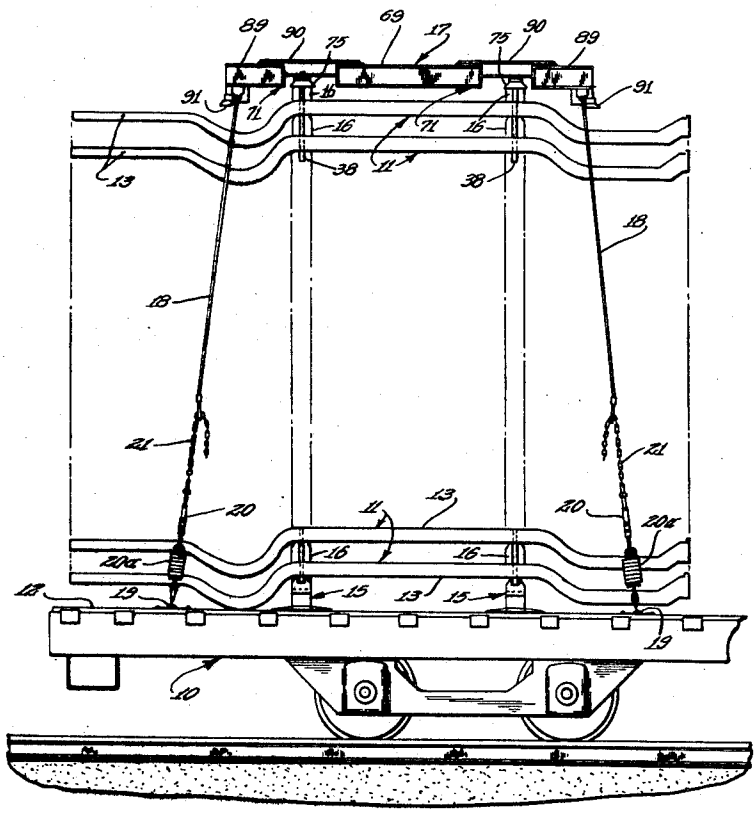
Primary Examiner—Drayton E. Hoffman
Attorney—Hill, Sherman, Meroni, Gross and Simpson

ABSTRACT: Stacking apparatus for tying horizontally extending vehicle frames to the deck of a flat car arranged to accommodate stacking of frames of different lengths and widths, for adjustment of the locations of the supporting pedestals on the deck of the flat car. The bottom frame is supported on spaced pedestals on the deck of the flat car and spacers between the frames space the frames apart. Locating and load bearing rods extending through the spacers and frames, interlock the frames and transfer the weight of the frames to the bottom pedestals. A harness in the form of an open rectangular frame extends over the top frame of the stack of frames and is seated on the top spacers and is tied to the deck of the vehicle by tiedown rods or chains. The harness is provided with seats for the top spacers, which are adjustable laterally and longitudinally, to conform to automobile frames of various lengths and widths. The pedestals are mounted for adjustable movement laterally and longitudinally of the vehicle and are locked in adjustment by locking members having locking engagement with anchoring members for the pedestals and holding the anchoring members in place and accommodating longitudinal adjustable movement thereof, to adjust the positions of the anchoring members along the car.



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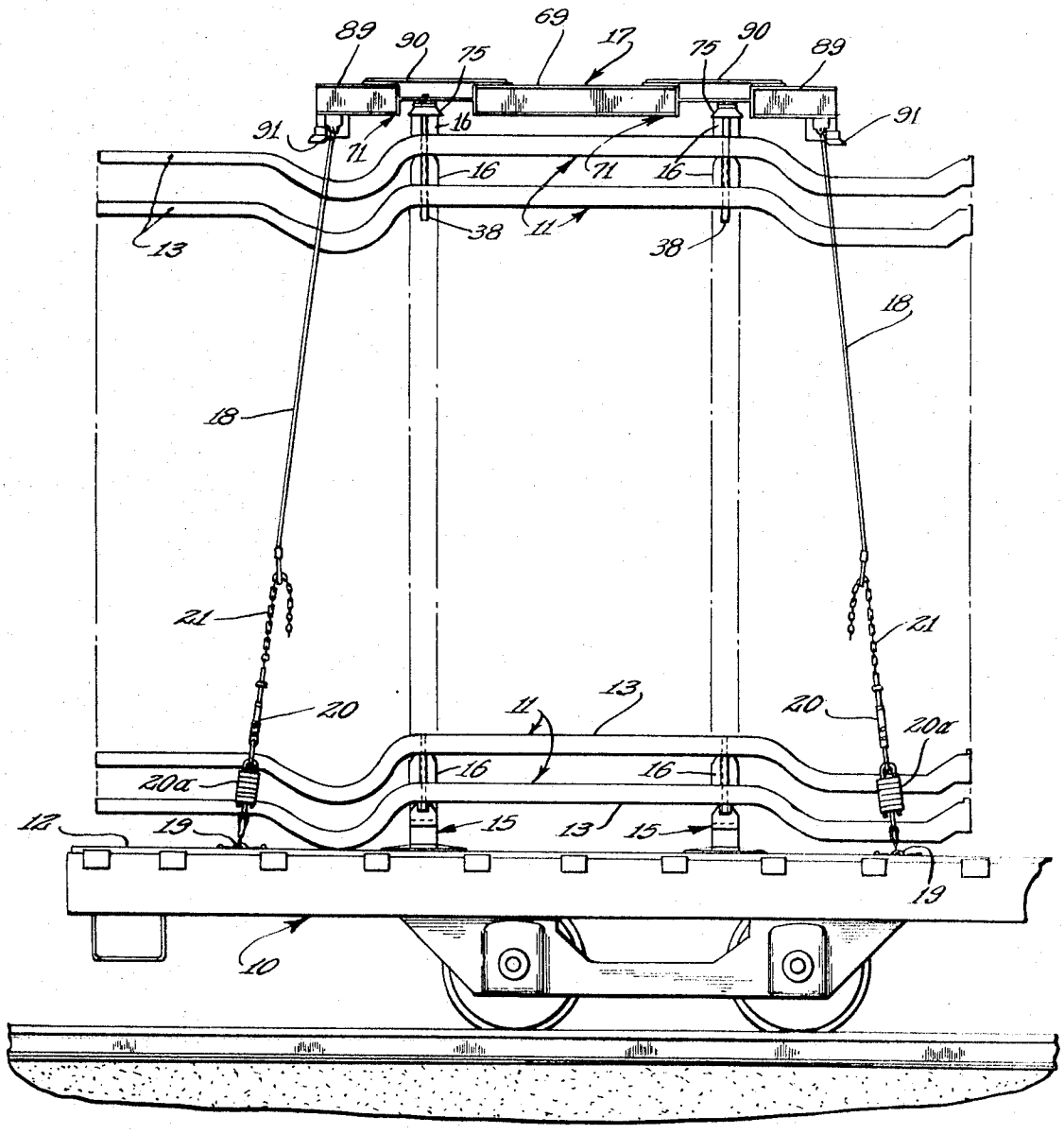
SHEET 1 OF 6

Fig. 1



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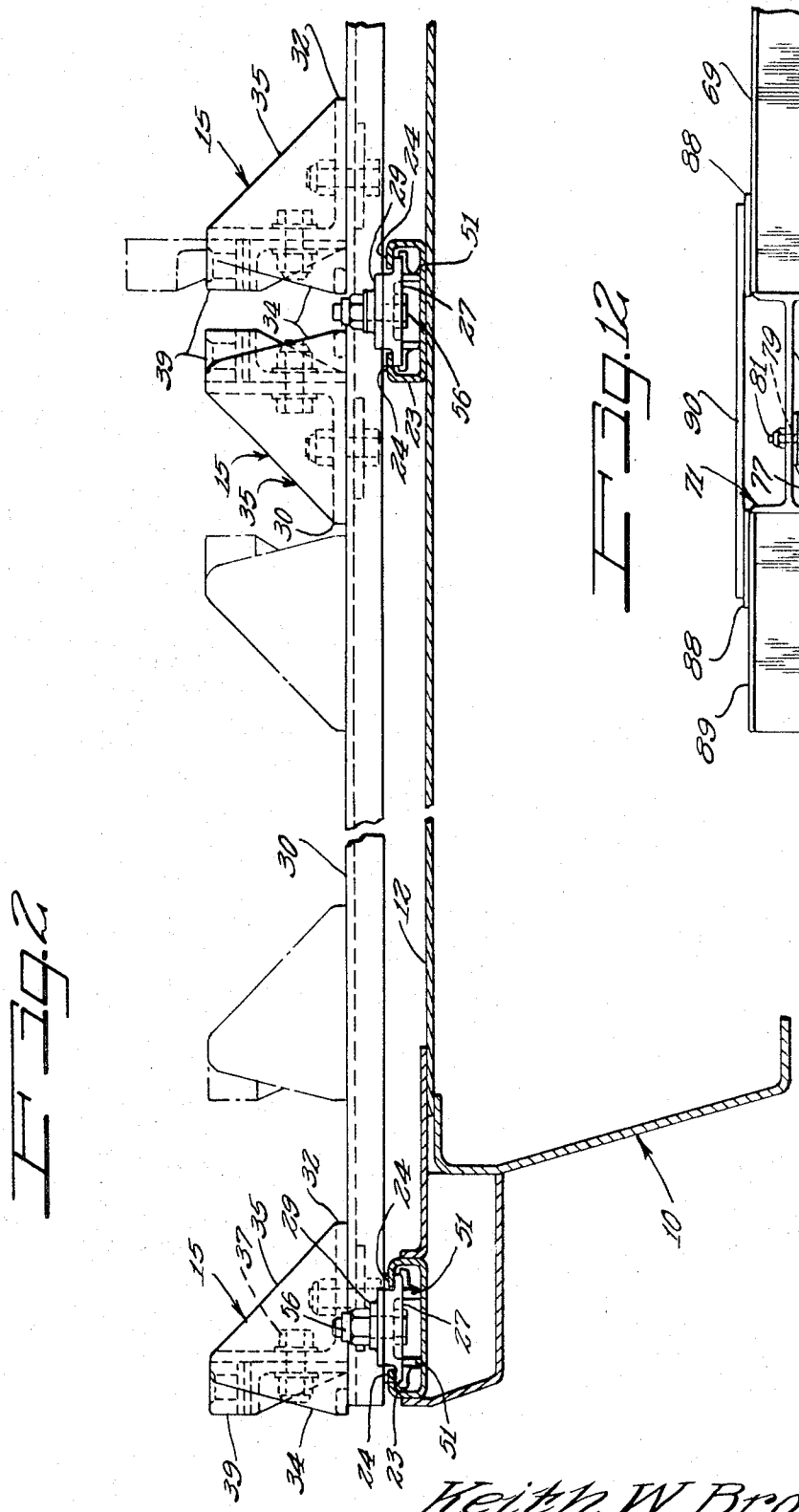

FIG. 2

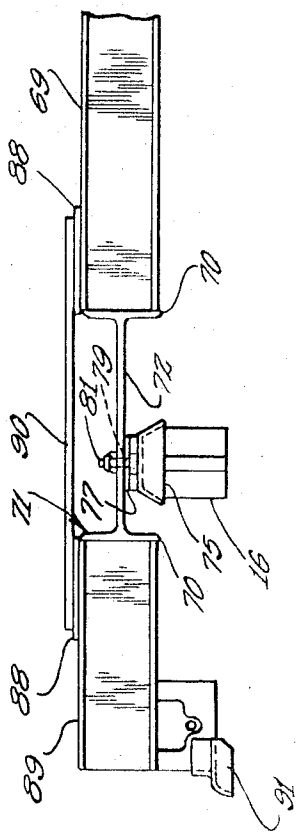

FIG. 12

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FIG. 3

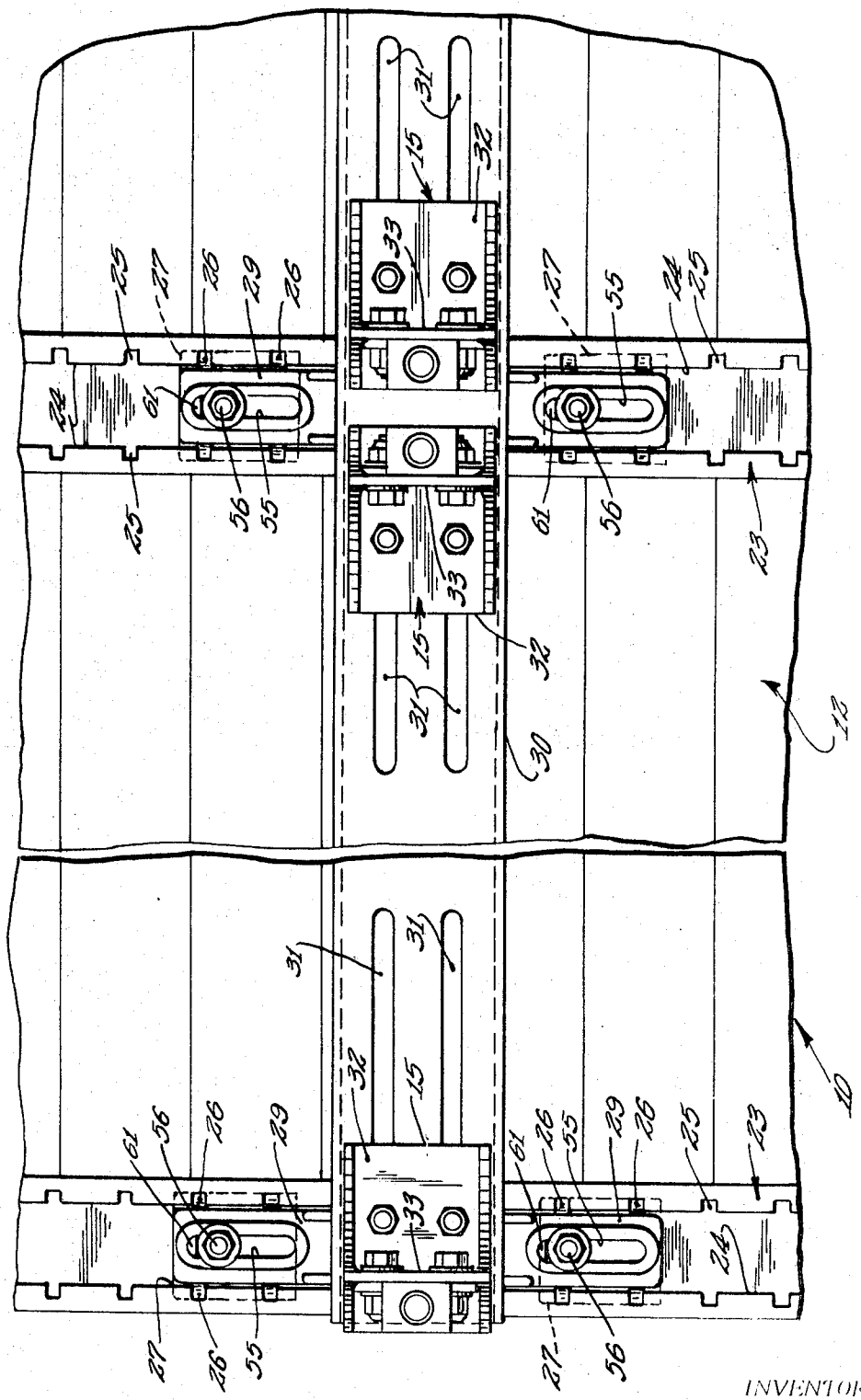

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Fig. 4

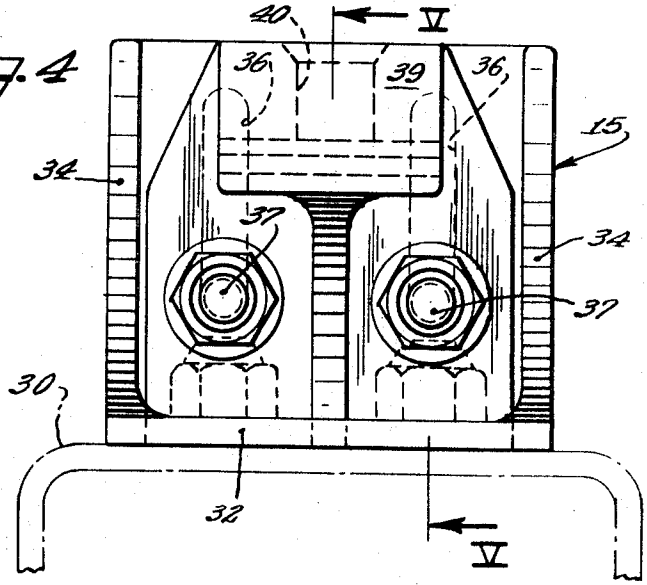


Fig. 5

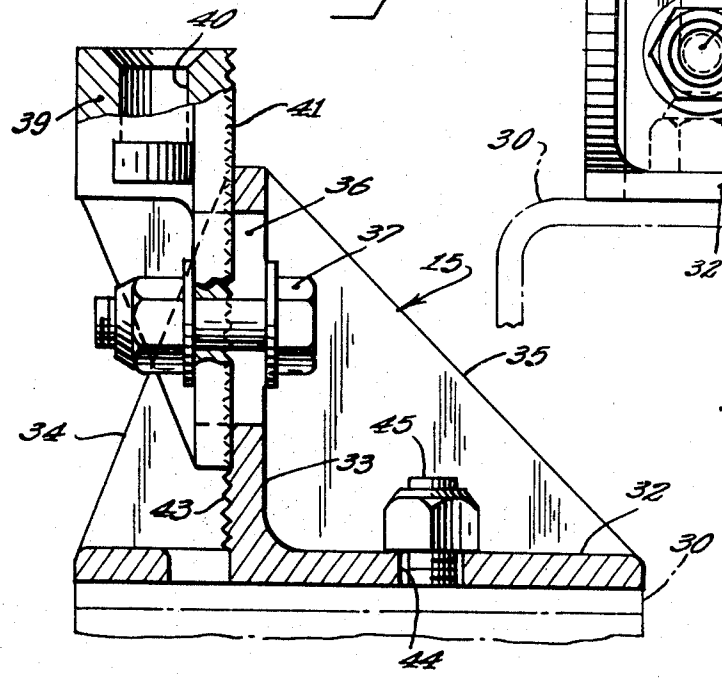


Fig. 9

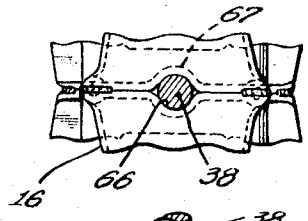
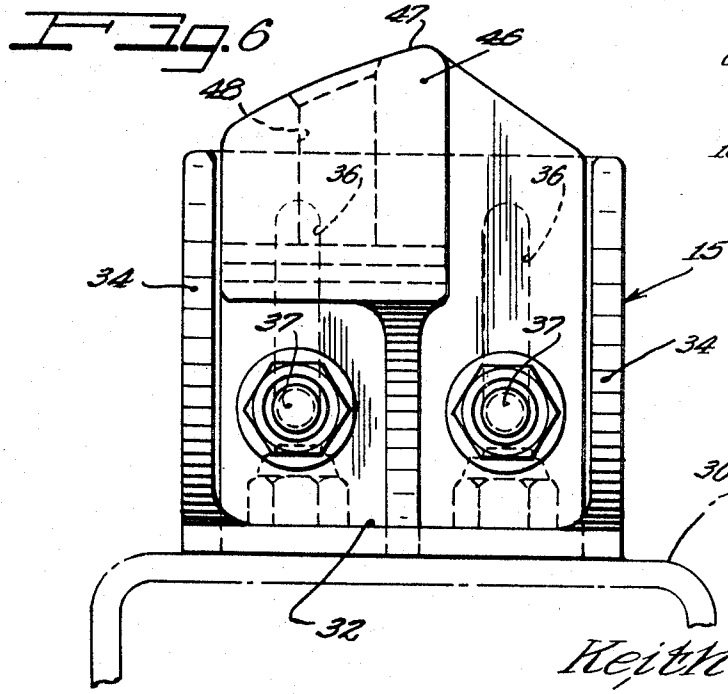


Fig. 6



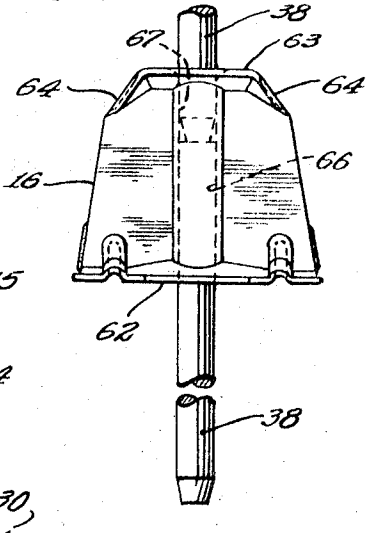


Fig. 10

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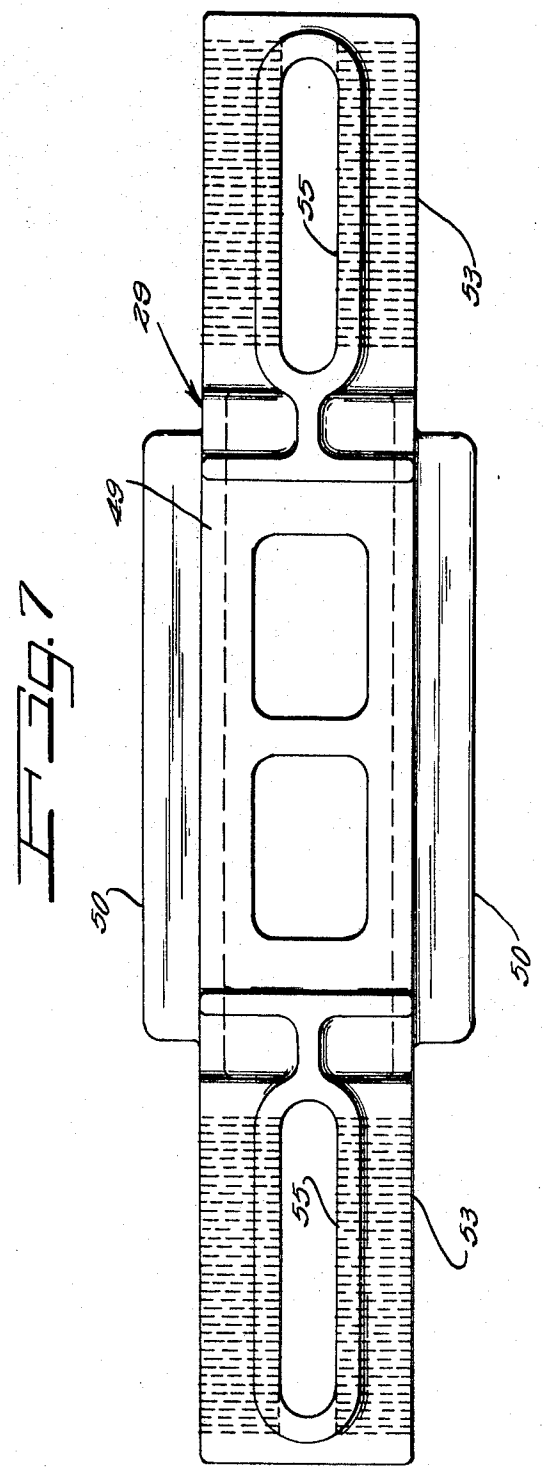

FIG. 7

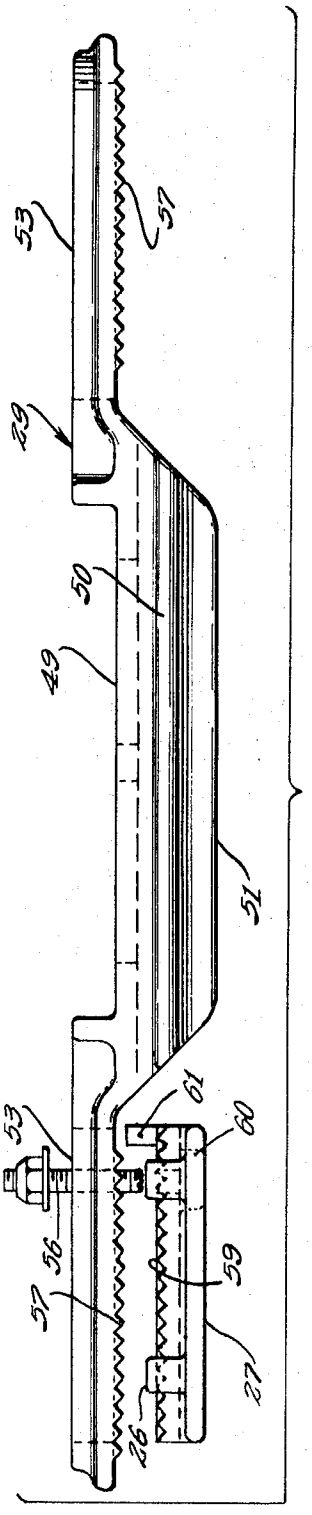

FIG. 8

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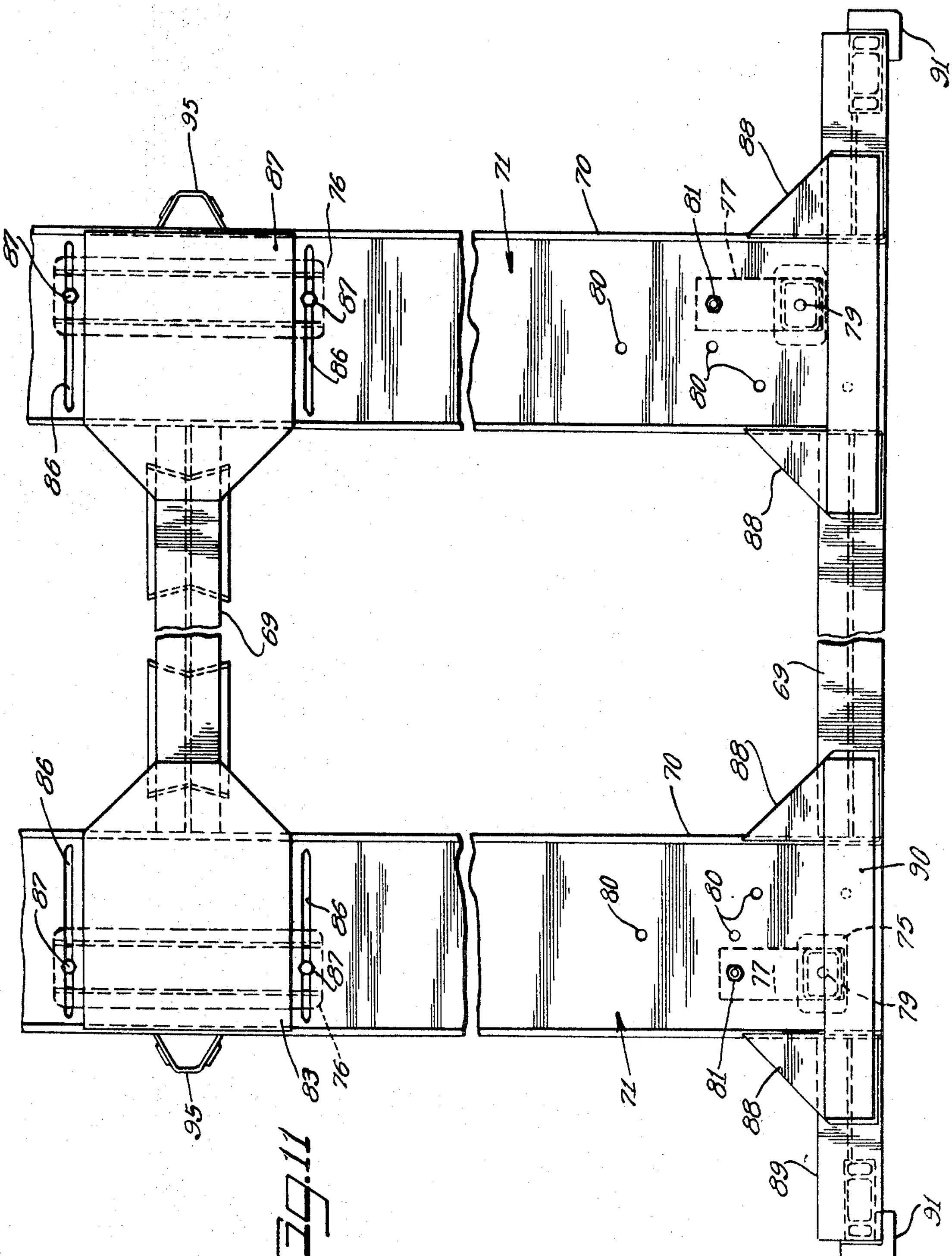

Fig. 11

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ADJUSTABLE AUTOMOBILE FRAME LOADING SYSTEM

BACKGROUND AND OBJECTS OF THE INVENTION

Heretofore, vehicle frames have been stacked on the decks of flat cars, one on top of the other, in horizontally extending positions and have been spaced apart by spacers transferring the weight of the frames to the pedestals and relieving the lower frames in the stack of the combined weight of the frames above the lowermost frames. The frames have been tied down by cross bars engaging the top frames of the stack of frames and by tie rods connecting the crossbars to the floor of the vehicle. Such tiedowns are shown and described in U.S. Pat. No. 2,915,991, dated Dec. 8, 1959 and entitled "Apparatus for Flat Loading of Vehicle Frames".

While such devices are in commercial use and operate in a satisfactory manner, the pedestals are usually permanently mounted on the deck of the flat car, with the result that the flat car can only carry frames for one type of vehicle. As for example, one automobile manufacturer uses passenger frames of seven different lengths and five different widths for its various models, excluding truck frames. Thus different flat cars must be provided for each length and width of vehicle frame and the car must be completely rebuilt, upon a change in models, where the new frames are of different lengths and widths from the frames for the previous models. By the apparatus of the present invention, one flat car can handle stacks of automobile frames for various makes and models of automobiles by the use of the same pedestals, spacers and tiedown harnesses by the simple expediency of arranging the pedestals, and harness for positioning relative to the deck of the car in accordance with the length, width and form of the frames being stacked.

A principal object of the present invention, therefore, is to provide a new and improved apparatus for tying down automobile frames to vehicles such as the decks of flat cars in stacked relation with respect to each other, so arranged as to enable one flat car to handle a wide variety of lengths and widths of frames.

Another object of the invention is to provide an improved form of apparatus for stacking and tying down vehicle frames to the deck of a flat car, arranged with a view toward utmost simplicity in construction and economical adaptability for various lengths and widths of frames.

Still another object of the invention is to provide an improved form of pedestal for the horizontal bottom frame of a stack of vehicle frames, in which the pedestal is mounted for positioning along the deck of the vehicle in accordance with the length and width of the frame loaded, and the support surface thereof may be elevated or lowered to provide the desired clearance between the frame and deck of the flat car.

Still another object of the invention is to provide an improved form of tiedown apparatus for stacking horizontally disposed automobile frames on the deck of a vehicle having a simple and improved form of saddle for the top frames of at least two laterally spaced stacks of frames, holding the frames in stacked relation relative to each other and adapted for frames of various lengths and widths.

These and other objects of the invention will appear from time to time as the following specification proceeds and with reference to the accompanying drawings.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a diagrammatic fragmentary view in side elevation of a freight car illustrating the principle of stacking vehicle frames on the car in accordance with the principles of the present invention.

FIG. 2 is a fragmentary diagrammatic transverse sectional view taken through the deck portion of a flat car, with certain parts broken away and showing the pedestals and adjustable anchoring support means therefor. FIG. 3 is a fragmentary top plan view looking onto the deck of a flat car, illustrating the

pedestal supports and adjustment means therefor, adapting the pedestals to vehicle frames of various lengths and widths and configurations.

FIG. 4 is a view in side elevation of a pedestal supporting the bottom frame of a stack of frames.

FIG. 5 is a sectional view taken substantially along lines V–V of FIG. 4.

FIG. 6 is a side elevational view like FIG. 4, but showing a different form of pedestal block than in FIG. 4, for supporting a different type of frame than supported by the pedestal block of FIG. 4.

FIG. 7 is a top plan view of the pedestal anchor shown in FIG. 3.

FIG. 8 is a view in side elevation of the anchor shown in FIG. 7, showing a locking plate, for locking the anchor in position associated with one end of the anchor.

FIG. 9 is a view in side elevation of one of the spacers, spacing the vehicle frames apart.

FIG. 10 is a top plan view of the spacer shown in FIG. 9 with the interlocking rod of the next upwardly spaced spacer shown in horizontal section.

FIG. 11 is a fragmentary top plan view of a harness for extending along the top frames of the stacks of frames and tying the frames down to the deck of the vehicle; and

FIG. 12 is a fragmentary side elevational view of one end portion of the harness shown in FIG. 12.

DESCRIPTION OF PREFERRED EMBODIMENT OF INVENTION

In the embodiment of the invention illustrated in FIGS. 1, 2 and 3 of the drawings, a railway flat car 10 is shown as having a plurality of vehicle frames 11 supported on and stacked above a flat deck 12 of the car in generally parallel relation with respect to each other and extending generally horizontally. Usually two stacks of frames are stacked across the deck of the car and the stacks of frames extend longitudinally along the deck of the car. The vehicle frames 11 are of a conventional construction and include laterally spaced side rails 13, suitably connected together by cross bracing (not shown), and may be of various configurations and may extend parallel for the length of the frame, or may converge from the back to the front of the frame.

As shown in FIG. 1, the bottom frame 11 is spaced above the deck 12 on pedestals 15 having supporting engagement with the undersides of the side rails 13, and the other frames 11 are stacked above the bottom frame in generally parallel relation with respect thereto and are interlocked relative to each other and to the bottom frame by interlocking spacers 16, having interlocking and supporting engagement with each other and supported on the bottom pedestals 15, to support the weight of the frames on the pedestals and the deck of the flat car, and to thereby relieve the lower frames of the stack of frames from the combined weight of the frames spaced thereabove.

A harness 17 in the form of a generally rectangular open framework is provided to tie the frames 11 down to the deck of the car. Said harness is arranged to tie down two laterally spaced stacks of frames and is connected to the deck of the car as by tie rods 18 transversely pivoted thereto and extending downwardly therefrom at least at the four corner portions of the harness. Anchoring devices 19 anchored to the deck of the car are connected to the tie rods 18 to connect the tie rods to the deck of the car as by turnbuckles 20 and flexible connecting devices, such as, tiedown chains 21, releasably hooked or otherwise secured to the lower ends of the rods 18. Compression units 20*a* of a conventional form, may be connected between the anchoring devices and turnbuckles 20. The tie rods 18 may be adjustable in accordance with the height of the stack of frames, if desired. The chains 21, however, afford some degree of adjustability.

The anchoring devices 19 may be mounted directly on the deck of the car outwardly of the pedestals 15, or may be ad-

justably carried in position retainers shown as being in the form of channels 23 extending along the deck of the car in parallel spaced relation with respect to each other. The anchoring devices 19 may be of any suitable form, so need not herein be shown or described further.

As shown in FIGS. 2 and 3, two position retainers 23 may extend along the outer sides of the car 10 while a single position retainer 23 may extend along the center of the deck of the car, to enable two laterally spaced stacks of frames to be supported on the deck of the car. The position retainers 23 while shown as being in the form of channels may be of various other forms and may be spaced in end to end aligned relation with respect to each other along the deck of the car, to enable a series of longitudinally aligned stacks of frames to be carried on the deck of the car, or may extend for the length of the car, where this is economically feasible. Said position retainers may also be a part of the deck of the car and will be termed retainer channels herein, for simplicity in describing the invention. Flooring may extend between the channels 23, to recess the tops of the channels to substantially floor level.

The retainer channels 23 have inwardly extending retainer flanges 24 extending inwardly of the top legs thereof. The flanges 24 have inwardly opening notches 25 spaced therealong and adapted to be engaged by lugs 26 of locking members or plates 27, for adjustably locking anchoring members 29 in position in the channels 23, as will hereinafter more clearly appear as this specification proceeds.

The anchoring members 29 extend longitudinally along the channels 23 and may be adjustably movable along the bottoms of said channels and are partially recessed therein. The laterally aligned anchoring members 29 form supports for transverse beams 30 extending across the car and mounted on said anchoring members at their opposite ends and intermediate their ends. The support beams 30 are shown as being in the form of inverted channels and may be suitably mounted on the longitudinally positionable anchoring members 29, to form supports for the laterally aligned pedestals 15,15. As shown in FIG. 3, the support beam 30 has sets of parallel slots 31 therein at spaced intervals, spaced laterally of the deck of the car to accommodate adjustment of the pedestals 15 transversely of the car in accordance with the widths of the frames being stacked.

As shown in FIGS. 4, 5 and 6, each pedestal 15 is shown as including a base 32 supported on the web of the support beam or channel 30 in a selected position of adjustment, and guided in the slots 31 for adjustable movement along said beam, as will hereinafter be more clearly described. A vertical load bearing wall 33 extends upwardly from said base 32 intermediate the ends of said base. Gussets 34 and 35 brace said load bearing wall to said base. The wall 33 has a pair of parallel spaced vertically extending slots 36 therein for receiving bolts 37 retaining a pedestal block 39 in a selected position of adjustment along said wall.

The pedestal block 39 has a top block portion having an upwardly opening socket 40 therein into which fits a locating and support pin 38, extending downwardly of a spacer 16, and supported in said socket. The pedestal block 39 also has an inner wall 41, shown in FIG. 5 as being serrated or toothed and engaging a corresponding serrated surface 43 of the upright wall 33, to positively hold the pedestal block 39 in position upon tightening of the nuts to the bolts 37.

The base 32 is also shown as having a plurality of bolt holes 44 leading therethrough in alignment with the slots 31 in the support beam 30 to receive bolts 45 holding the base in position along the support beam 30. The bolts 45 may extend upwardly from a retainer plate (not shown) engaging the undersurface of the web of the beam or channel 30, to positively hold the pedestal in position along said channel.

The pedestals 15,15 may thus be adjustably moved across the deck of the car along the support beam 30 therefor and be held in adjusted relation with respect thereto, to position the pedestal blocks 39 to have supporting engagement with the bottom rails 13 of the bottom frame of a stack of frames. The pedestal block 39 may also be vertically adjusted in accordance with the type of frame supported thereby, and the desired clearance between the frame and deck of the car.

In FIG. 6 of the drawings, I have shown a modified form of pedestal block 46 supported on the base 32 in the same manner the pedestal block 39 is supported on its base. This pedestal block has an inclined top surface 47 conforming to the inclined bottom surfaces of the rails of certain frames. A socket 48 similar to the socket 40 leads into said block 46 and opens to the top thereof. It is, of course, apparent that various other forms of pedestal blocks may be used to provide the proper support for the bottom frame of the stack of frames, and that the supporting surfaces of the blocks may be formed to provide the most efficient support for the side rails of the frames.

The beams 30 and pedestals 15 are adjustably moved longitudinally of the deck 12 in accordance with the lengths of the frames being stacked, by positioning of the anchoring devices 29 along the channels 23. Each anchoring device 29 is shown in FIGS. 2, 3, 7 and 8 as being in the form of a casting, although it need not be a casting, and as having a recessed central portion 49 for receiving a beam 30 and accommodating said beam to be secured thereto and positioned along the deck 12, by movement of the anchoring devices 29 along the channels 23.

Each anchoring device 29 has a pair of laterally extending flanges 50 extending from said central recessed portion 49 beyond opposite sides of said anchoring device and slidable beneath the retainer flanges 24 of the associated channel 23. The anchoring device 29 also has a pair of parallel spaced runners 51 slidable along the web of the channel 23 when it is desired to adjustably move the anchoring device along said channel. The anchoring device 29 also has opposite end portions 53 spaced above the runners 51 and flanges 50, having slots 55 extending therealong and adapted to adjustably receive bolts 56 extending upwardly of the locking members 27. The elevated end portions 53 are shown in FIGS. 7 and 8 as having downwardly facing serrated or toothed portions 57 adapted to be engaged by similar upwardly facing serrated or toothed portions 59 extending upwardly of the locking members 27.

Each locking member 27 is shown in FIGS. 2 and 8 as having a pair of flanges 60 extending along opposite sides thereof underneath the retainer flanges 24 of the channel 23 and having the lugs 26 extending upwardly therefrom for locking engagement with the notches 25 in the retainer flanges 24. Each locking member 27 also has a central apertured portion (not shown), to receive a bolt 56, and has a guide lug 61 spaced in advance of said bolt and in longitudinal alignment therewith, and having slidable guiding engagement with the associated slot 55. Tightening of the nuts on the bolts 56 will thus draw the locking members 27 toward the end portions 53 of the anchoring members 29 and engage the lugs 26 with the slots 25 and also engage the downwardly facing serrated portions 57 of the elevated end portions 53 with the upwardly facing serrated portions 59 of the locking members 27, to positively hold the anchor in position along its channel 23, and to thereby position the support beam 30 and pedestals 15 supported thereon, in the desired longitudinal location relative to the deck of the vehicle.

As shown in FIGS. 9 and 10, each spacer 16 has a widened base portion 62 engageable with the top of a side rail 13 of the vehicle frame 11. The spacer 16 also has a widened top portion 63 having opposite sloping sides 64 converging to the sidewalls of the spacer. The spacer herein shown is made from two identical parts welded together and has a central passageway 66 extending vertically therealong formed by embossments in the parts, with the concave portions of the embossments registering with each other when welded together. The passageway 66 receives a locating pin 38, depending from the spacer and adapted to fit through vertically aligned drilled holes (not shown) in a side rail 13 of the automobile frame 11. The locating pin 38 may be welded or otherwise secured to the

spacer 16 and may stop short of the top of said spacer to form a socket 67 for the next adjacent locating pin 38. The lowermost pin 38 seats in the bottom of the socket 40 while the next adjacent pin 38 seats on the top of each lowermost pin to provide a continuous column extending for the height of the stack of frames to transmit a greater part of the weight of the frames of the stack of frames to the pedestals 15 and to relieve the bottom frame from the weight of the entire stack of frames.

The harness 17 comprises at least three parallel-spaced beams 69 in alignment with the channels 23 and extending longitudinally of the deck of the flat car. The beams 69 are shown in FIGS. 1, 11 and 12 as in the form of I-beams having webs thereof extending vertically and abutting flanges 70 of parallel transverse I-beams 71, at their opposite ends. The I-beams 71 are shown in FIGS. 11 and 12 as having horizontally extending webs 72, forming a support for depending downwardly facing outer centering cups 75 engageable with the top spacers 16 on the outer side rails 13 of the top frames, and for inner centering cups 76 engageable with the top spacers 16 on the inner side rails 13 of the two laterally spaced stacks of frames.

As shown in FIG. 12, the outer centering cups 75 are mounted on the bottom of a spacer plate 77. Each centering cup has a locating lug 79 extending upwardly therefrom for engagement with a selected hole of a series of holes 80 extending through the web 72 of the I-beam 71, adjacent each end portion of said I-beam. The number of holes 80 depends upon the lengths and widths of the frames loaded, and only a small number of such holes are shown herein for the sake of simplicity. The spacer plate 77 extends inwardly of the centering cup 75 and has a stud or bolt 81 extending upwardly therefrom through the web 72 of the I-beam 71. The spacer plate and stud form a means for securing the centering cup 75 to depend from the web of the I-beam. The holes 80 are spaced along the web of the I-beam in accordance with the lengths and widths of the vehicle frames to be stacked and loaded and the spacing between the lug 79 and stud or bolt 81, to enable the centering cups 75 to engage the spacers 16 for a wide variety of lengths and widths of vehicle frames. The spacer plate 77 spaces the bolt 81 inwardly of a tying plate 90 extending across the tops of gussets 88 at the ends of the beam 71 and thereby affords accessibility to said bolt and the nut thereon, when it is desired to change the position of the centering cup. The tying plate 90 and gussets 88 connect the top flange of the beam 69 with the flanges of the beam 71 and top flange of an end beam 89, forming an outer extension of the beam 69.

The center or inner centering cup 76 is of an inverted troughlike form and is long enough to take care of two adjacent spacers 16 on the inner rails 13 of the top frames of two stacks of frames, stacked side-by-side on the deck 12 of the flat car. The centering cup 76, like the centering cup 75, is spaced from the bottom of the web of the I-beam the same distance as the centering cups 75. Studs or bolts 87 extend upwardly of the centering cup 76, on the outsides of a reinforcing plate 83 through parallel slots 86 in the web of the I-beam 76. The slots 86 and studs or bolts are provided to support the centering cup 76 on the bottom of the web of the I-beam 71, for adjustable movement across said web, to conform to vehicle frames of various lengths. The reinforcing plate 83 extends across the tops of the legs 70 of the I-beam 71, over the flange or top leg of the central I-beam 69, and forms a gusset, bracing said central I-beam 69 to the I-beam 71.

Guides 91 depend from the ends of the end beams 89 and serve to locate, guide and retain the harnesses in position, placed one on top of the other on a return trip, when the car is empty. Anchors 95 extend outwardly of the beams 71 in forward and rearward directions in alignment with the longitudinal center of the center beam 69, to afford a means for tying the harness or stack of harnesses to the car, on the return trip.

In loading the flat car 10 with frames 11, the transverse support beams 30 are first located on the deck of the car by the anchoring members 29 and locking members 27 in accordance with the length of the vehicles frames to be loaded in stacked relation with respect to each other. The anchoring placed 29 and transverse support beams 30 may then be locked in position by the locking members 27. The pedestals 15 on the transverse support beams 30 are then moved along said beams toward or from each other to register with the side rails of the lower frames, and the drilled holes (not shown) in said side rails for the locating pins 38 of the spacers 16, to locate said locating pins with the sockets 40 in said pedestals. The pedestals 15 are then locked in position by tightening the nuts on the bolts 45. The lowermost frames are then placed on the pedestals 15 and the spacers 16 are mounted on the tops of the frames with the locating and load bearing pins 38 extending through the side rails of the frames into the sockets 40 into engagement with the bottoms of said sockets. The frames are then stacked one on top of the other and spacers 16 are placed on top of each frame as stacked and the locating and the load bearing pins 38 are engaged with the tops of the locating and load bearing pins 38 for the next downwardly spaced frame. The harness is then placed on the spacers 16 on the top frame and located by the centering cups 75 and 76 engaging the top spacers 16, to hold the two stacks of frames from weaving movement. The tie rods 18 when connected with the harness at the four corners thereof are then anchored to the deck of the vehicle and tension on the chains 21 and tie rods is taken up by the turnbuckles 20.

When this has been done at each longitudinally spaced location along the flat car, the frames are then ready for transportation and are securely held in position against lateral shifting movement when traveling over irregular track or around sharp curves and are also held against forward shifting movement should the flat car make a sudden stop.

After the frames have been unloaded, the harnesses 17 may be stacked one above the other on the lower pedestals 15 and located by the guides 91 at the four corners of the frame, engaging the top flanges 89 of a next lowermost frame and holding the frames from shifting movement relative to each other. The frames may then be held in position by tiedown chains or other hold down devices. The tie rods 18 may be retained on the deck of the vehicle beneath the lowermost harness and tied in this location in a suitable manner. The spacers 16 may be placed in suitable containers on the car or the deck of the car or recessed beneath the deck thereof.

It may be seen from the foregoing that an effective stacking and tiedown system has been provided for stacking and transporting automotive vehicle frames, making it possible to use one car for stacking frames of various lengths and widths, and that the stacking and retaining devices may readily be positioned and retained in position along the deck of the car in accordance with the width of the vehicle frame, with a minimum amount of manual effort.

It may further be seen that the stacking and retaining devices are so arranged as to be efficiently stacked and stored on the car during the return trip of the car, when the vehicle frames have been unloaded and the car is being returned to pick up a new load of automotive vehicle frames.

While I have herein shown and described one form in which the invention may be embodied, it may readily be understood that various variations and modifications in the invention may be attained without departing from the spirit and scope of the novel concepts thereof.

I claim as my invention:

1. In an apparatus for stacking and tying down automotive vehicle frames to the deck of a railway car and the like, one on top of the other, and in combination with a railway car having,

a flat deck,

three parallel position retainers extending along the deck of the railway car,

a plurality of longitudinally aligned anchoring members adjustable secured in position in each position retainer in laterally aligned relation with respect to each other,

a support beam extending across each row of laterally aligned anchoring members,

means securing said support beams to said anchoring members,

means for locking said anchoring members in selected positions along said channels,

two inner pedestals and two outer pedestals supported on each support beam and adapted to have supporting engagement with laterally spaced lower frames of a stack of vehicle frames,

spacer means between the vehicle frames of the stacks of frames, vertically spacing the frames apart and transferring the weight of the frames onto said pedestal means,

top spacers on the top frames of the stacks of frames,

a harness extending along the top frames of the stacks of frames,

said harness being in the form of an open generally rectangular frame sufficiently wide to extend over the tops of two laterally aligned stacks of vehicle frames and tie said frames to the deck of the railway car,

tiedown means connected from said harness to the deck of the vehicle and tying said harness and frames to the vehicle deck,

and downwardly opening centering cups having outwardly flaring sidewalls mounted on the bottom of said harness for engagement with said top spacers, to center said harness with respect to the two laterally spaced stacks of frames.

2. A tiedown apparatus in accordance with claim 1, wherein the means locking said anchoring members in selected positions along said position retainers, comprise spaced locking devices adjustably movable along said position retainers and movable vertically into interengagement with said position retainers, means drawing said locking devices into interengagement with said position retainers, and interengaging connections between said locking devices and said anchoring members at spaced intervals along said anchoring members, to releasably lock said anchoring members in position along said position retainers.

3. A tiedown apparatus in accordance with claim 1,

wherein the outer centering cups are adjustable longitudinally and laterally of said harness to conform to the positions of said top spacers on the top frames of the stack of frames,

wherein a single inner centering cup is provided to engage the two side-by-side top spacers of the top frames, and

wherein the inner spacers are adjustable longitudinally of the harness.

4. In an apparatus for stacking and tying down automotive vehicle frames to the deck of a railway car and the like, one on top of the other, and in combination with a railway car having a flat deck,

a plurality of laterally spaced parallel upwardly opening retainer channels extending longitudinally of the flat deck,

said channels having parallel walls having retainer flanges extending inwardly therefrom having spaced inwardly opening notches therein,

pedestal means adjustably movable along said channels and adapted to have supporting engagement with a lower frame of a stack of vehicle frames,

spacer means between the vehicle frames, vertically spacing the frames apart and transferring the weight of the frames onto said pedestal means,

a harness extending along the top of the stack of frames, and comprising an open generally rectangular frame,

tiedown means connected from said harness to the deck of the vehicle and tying said stack of frames to the vehicle deck, and

means mounting said pedestal means on the vehicle deck for adjustable movement therealong comprising spaced anchoring members guided for adjustable movement along said channels,

each anchoring member having downwardly facing toothed surfaces at each end thereof and laterally extending flanges disposed therebetween and slidable beneath said retainer flanges to retain the respective anchoring member from vertical movement relative to the vehicle deck,

locking devices at opposite ends of said anchoring members and having upwardly facing toothed surfaces, registrable with the downwardly facing toothed surfaces of said anchoring members and having,

lugs projecting upwardly therefrom free from said notches when at the bottoms of said channels,

means drawing said toothed surfaces of said locking devices into engagement with the toothed surfaces of said anchoring members and moving said lugs upwardly into engagement with said notches, for locking said anchoring members in position in said channels,

support beams mounted on said laterally aligned anchoring members intermediate the ends thereof,

means securing said support beams to said anchoring members, and

means for securing said pedestals to said support beams for lateral adjustable movement transversely of the vehicle to conform to automotive frames of various widths.

5. The tiedown apparatus of claim 4 wherein each pedestal is vertically adjustable and includes,

a base mounted on a support beam for adjustable movement transversely of the deck,

a vertical load bearing wall extending upwardly of said base,

a pedestal block supported on said load bearing wall for adjustable movement therealong,

said pedestal block and said vertical wall having interengaging toothed connection with each other, and

securing means securing said pedestal block to said wall.

6. A tiedown apparatus in accordance with claim 4,

wherein the adjustable connection between said load bearing wall and pedestal block includes a slot and bolt connection, and

wherein the interengaging toothed surfaces between said load bearing wall and said pedestal block cooperate with said bolt and slot connection to transfer the loads from said block to said load bearing wall and base.

7. A tiedown apparatus in accordance with claim 4,

wherein at least three parallel channels extend along the deck of the railway car,

wherein longitudinally aligned anchoring members are mounted in each channel,

wherein rows of anchoring members are laterally aligned in said three channels,

wherein a support beam extends across each row of laterally aligned anchoring members and is secured to said anchoring members, and

wherein two outer pedestals and two inner pedestals are supported on each support beam for adjustable movement therealong to conform to the widths of preselected vehicle frames.

8. A tiedown apparatus in accordance with claim 4,

wherein the harness is in the general form of an open rectangular frame sufficiently wide to extend over the tops of two laterally aligned stacks of vehicle frames and tie said frames to the deck of the railway car,

wherein top spacers are provided on the top frames of the stack of frames, and

wherein downwardly opening centering cups having outwardly flared sidewalls are mounted on the bottom of said harness and are selectively positionable to engage said top spacers to center said harness to tie the two laterally spaced stacks of frames to the deck of the railway car.

9. A tiedown apparatus in accordance with claim 8,

wherein outer and intermediate centering cups are mounted on said harness for adjustable movement longitudinally and laterally of said harness in accordance with the length and width of the automotive vehicle frames on the deck of the car, and

wherein the intermediate centering cups are engageable with two top side-by-side spacers, on the adjacent rails of the sideaby-side top frames of the stacks of frames.

10. In an apparatus for stacking and tying down automotive vehicle frames to the deck of a vehicle,

at least two parallel channels extending longitudinally of the deck,

pedestal means having supporting engagement with a lower frame of a stack of frames,

means mounting said pedestal means for adjustable movement along said channels and for lateral movement relative thereto,

other means locking said pedestal means in selected positions of adjustment,

each pedestal means including a pedestal block,

a base having a vertically extending load bearing wall,

and means supporting said pedestal block on said load bearing wall and accommodating vertical adjustment of said pedestal block relative to said base.

11. In an apparatus for stacking and tying down automotive vehicle frames to the deck of a vehicle,

at least two parallel channels extending longitudinally of the deck,

pedestal means having supporting engagement with the lower frame of the stack of frames,

means mounting said pedestal means for adjustable movement along said channels and for lateral movement relative thereto,

other means locking said pedestal means in selected positions of adjustment along said channels,

each pedestal means including a pedestal block,

a base having a vertically extending load bearing wall,

means supporting said pedestal block on said load bearing wall and accommodating vertical adjustment of said pedestal block relative to said base, said support means including a releasable interengaging load bearing connection between said pedestal block and load bearing wall, transferring the loads from said block to said load bearing wall and base.

12. A tiedown apparatus in accordance with claim **11**,

wherein the means accommodating vertical adjustment of said pedestal block relative to said base and holding said pedestal block in adjusted relation with respect to said base includes a slot and bolt connection, and

wherein interengaging meshing teeth cooperate with said bolt and slot connection, to transfer the loads from said block to said load bearing wall and base.