

[11] 3,552,325

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FIG. 1

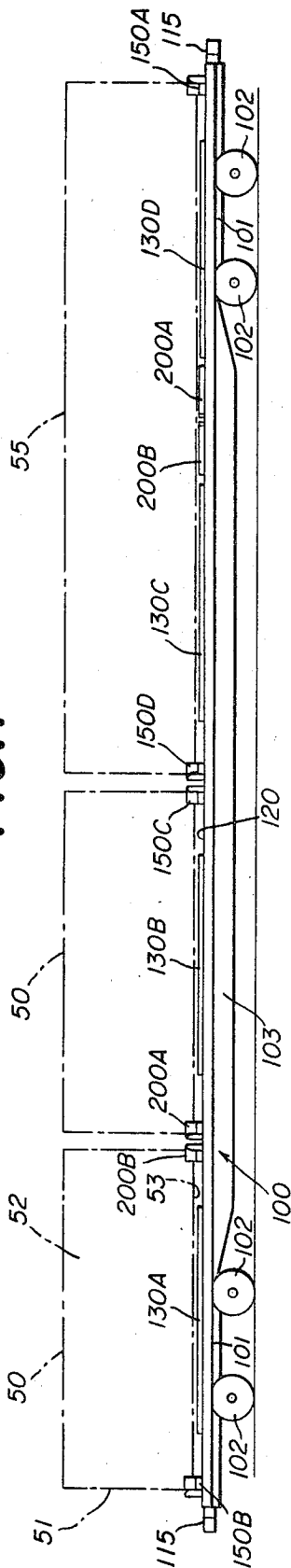


FIG. 2

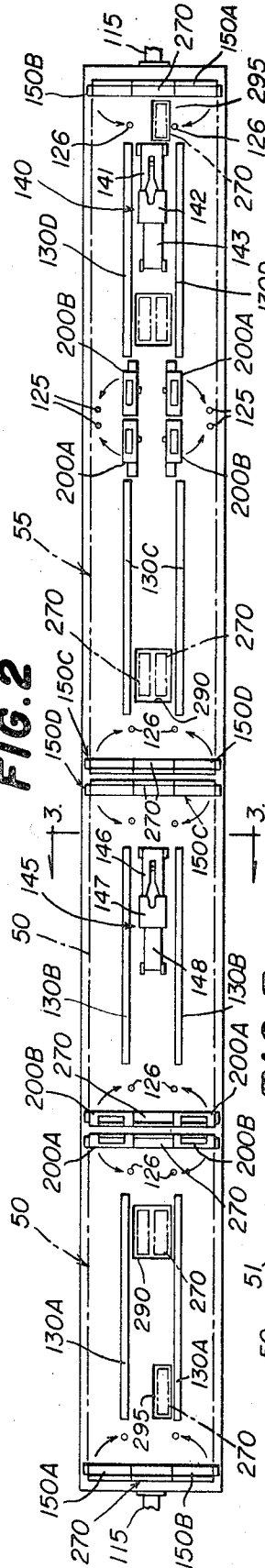


FIG. 3

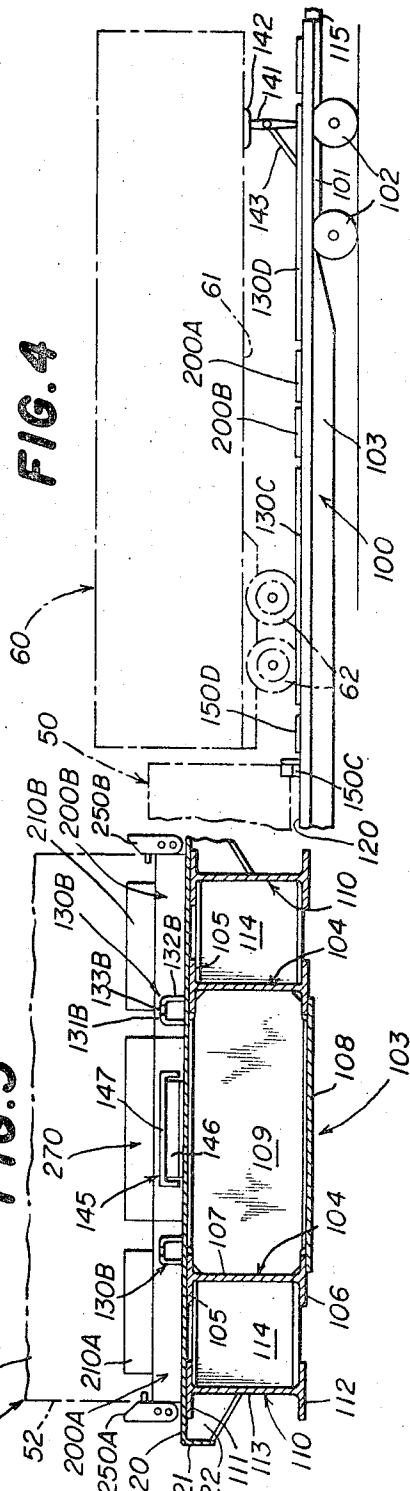
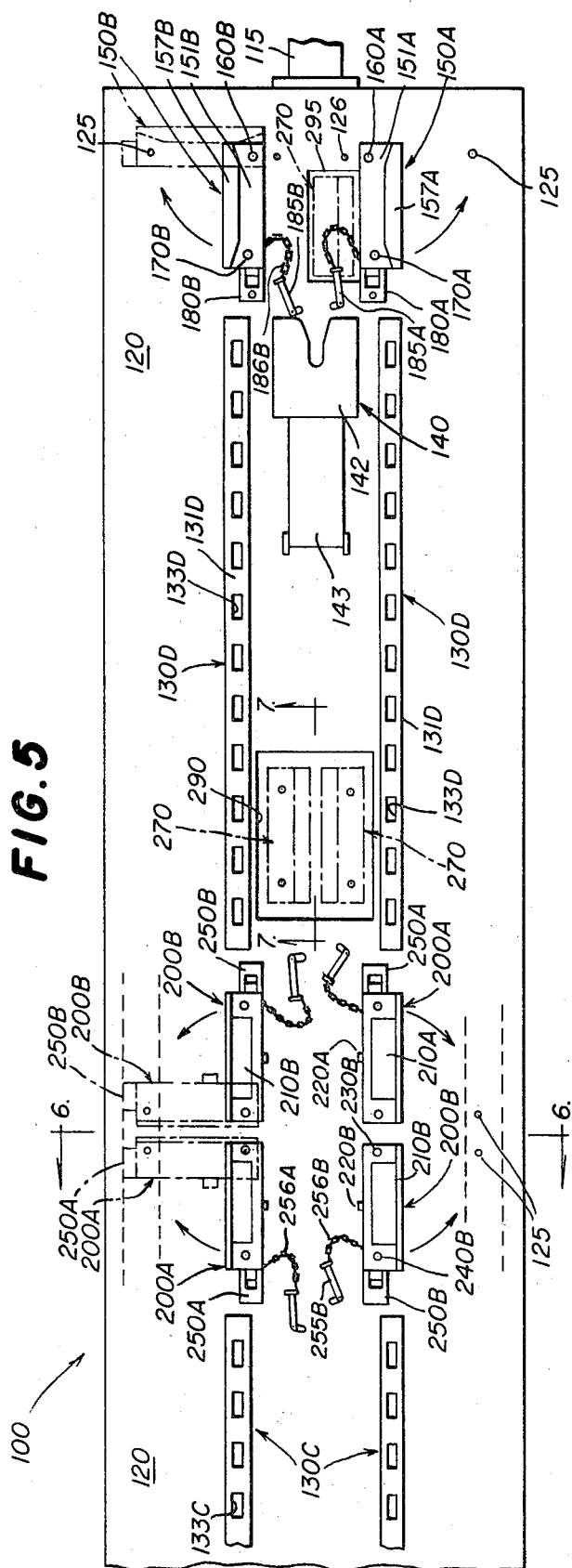
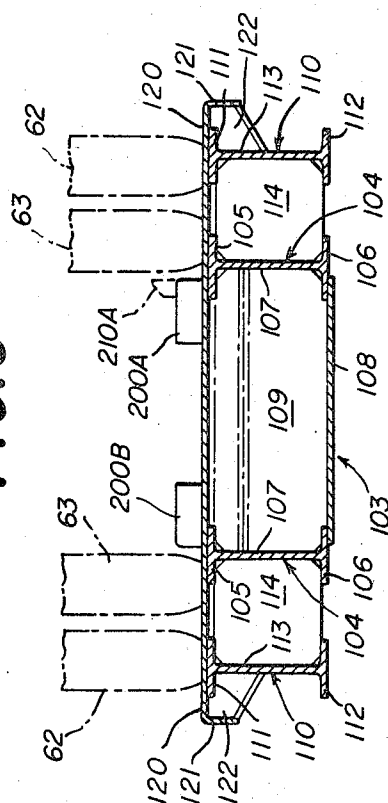


FIG. 5



F16.6



7/6/7

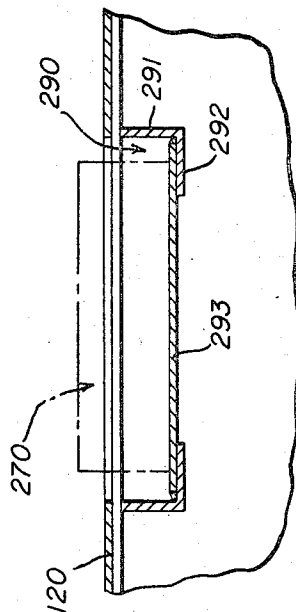


FIG. 8

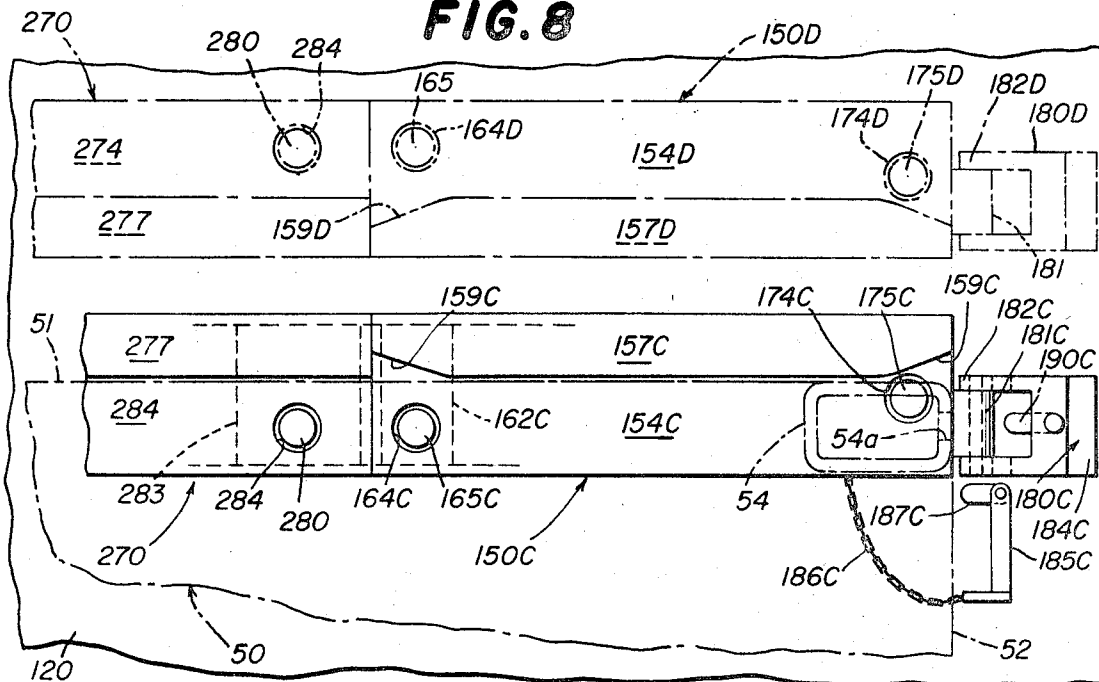


FIG. 9

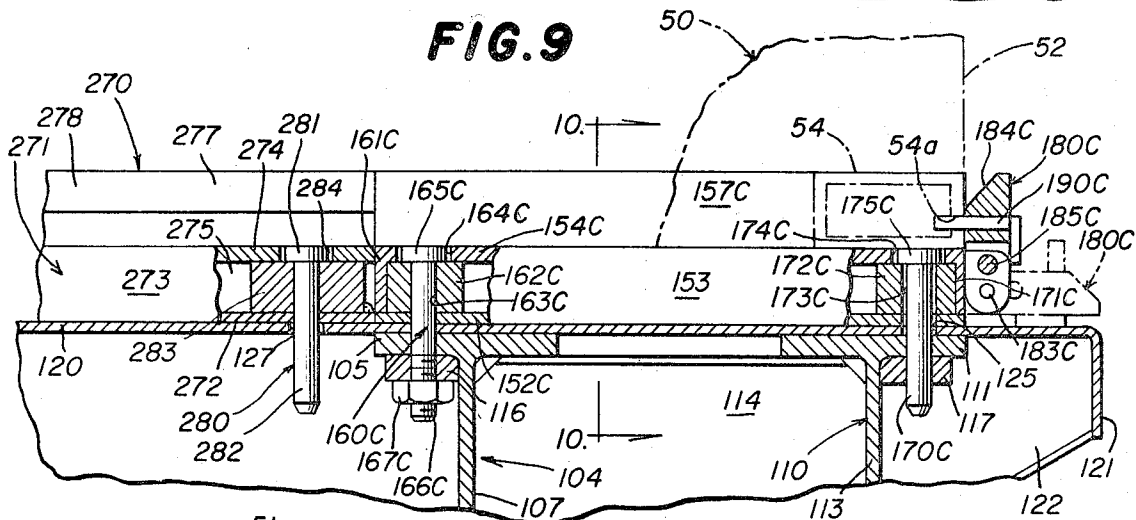
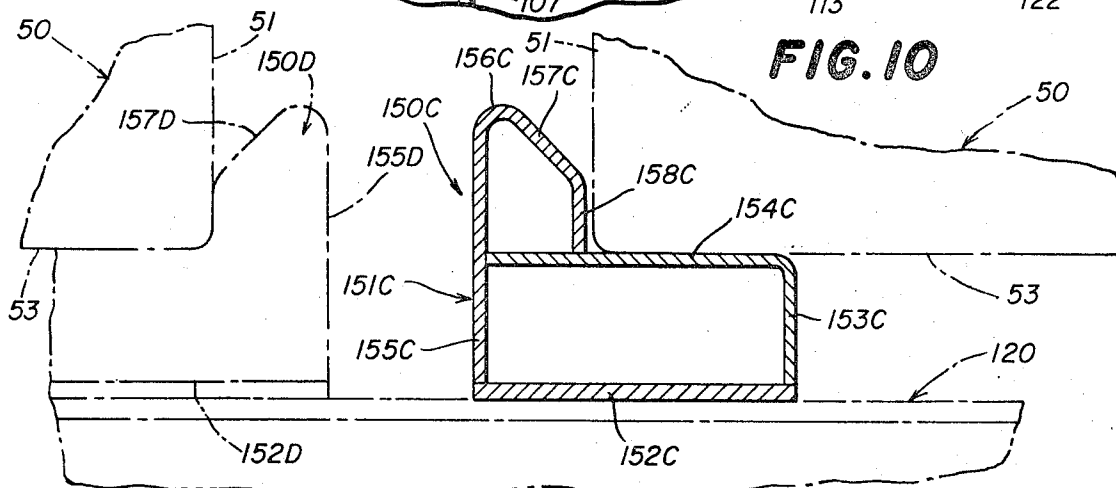
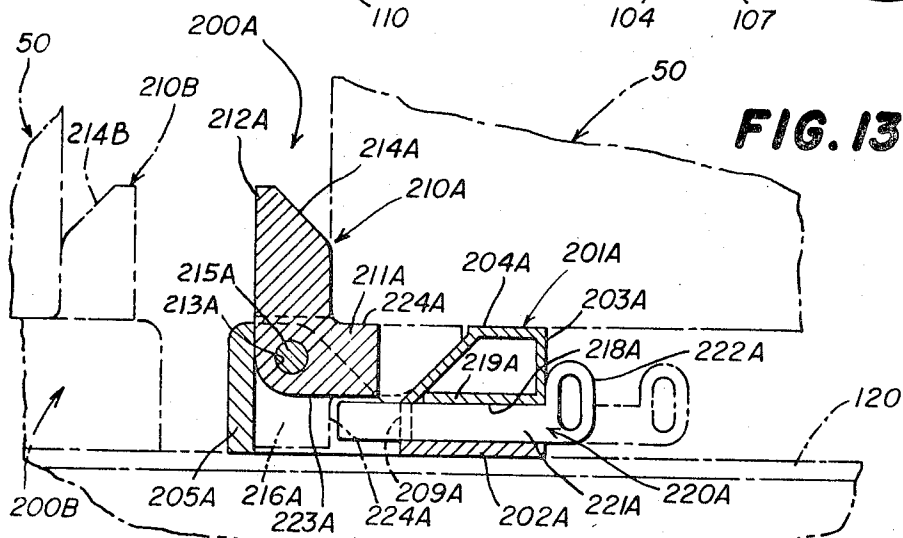
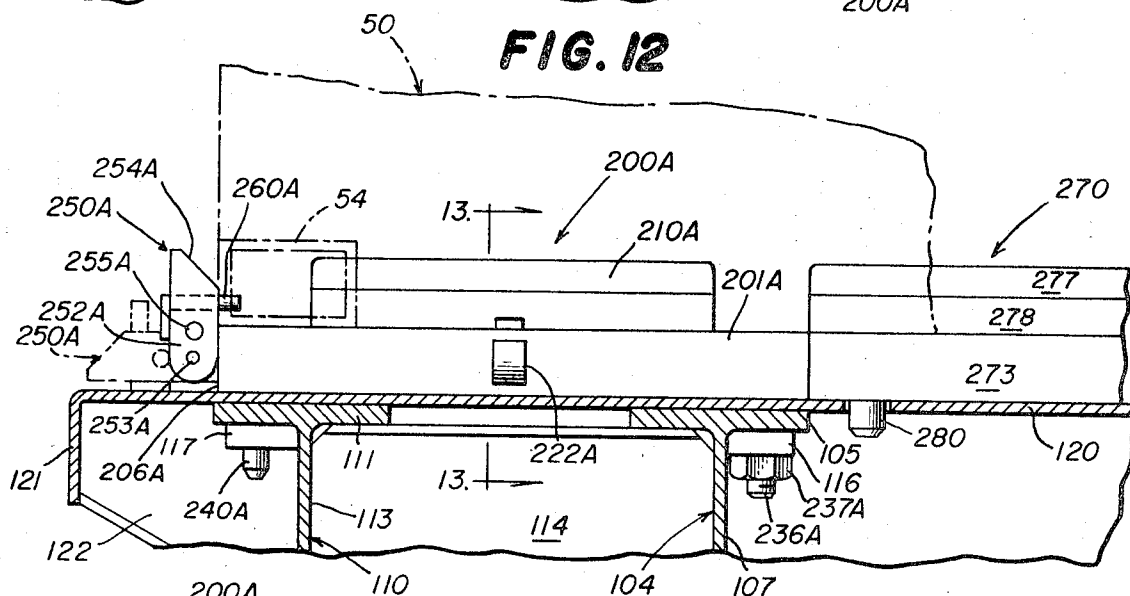
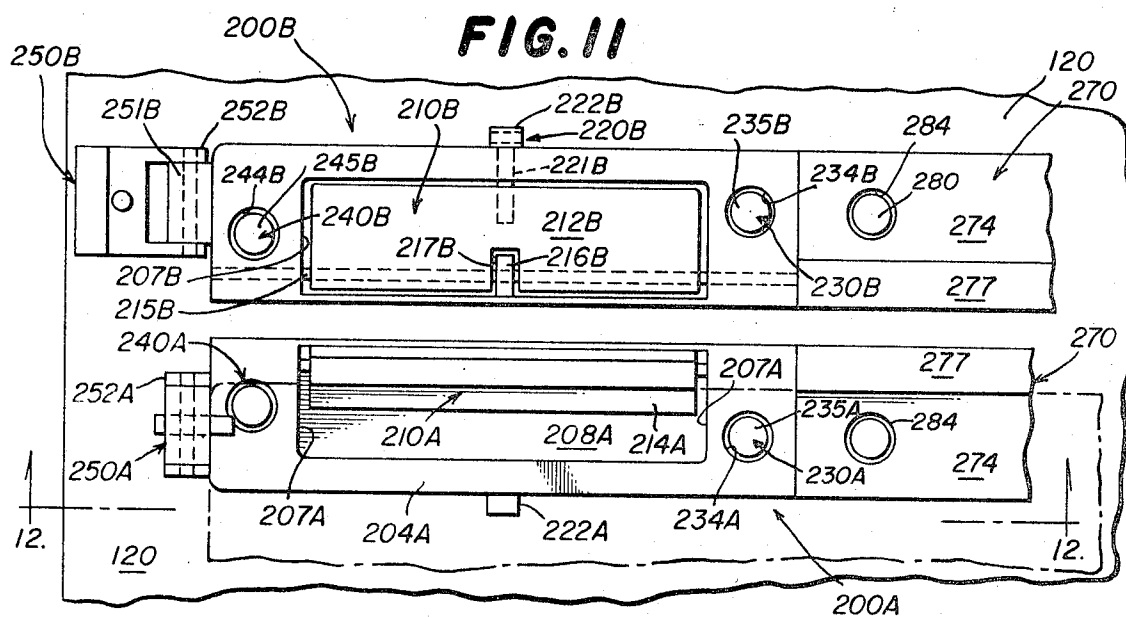


FIG. 10





FREIGHT TRANSPORTATION SYSTEM AND COMPONENTS THEREOF

The present invention relates to freight transportation systems, and more particularly to such systems utilizing a flat deck car having guide rails fixedly mounted thereon and container bolsters shiftably mounted thereon to facilitate the carrying of both road semitrailers and containers on the car.

It is an important object of the present invention to provide a freight transportation system comprising a railway car including longitudinally spaced-apart running gears having rail wheels, a longitudinally extending deck bridging the running gears and overlying the rail wheels for supporting both road semitrailers and containers, a plurality of pairs of longitudinally extending guide rails respectively mounted on the deck, the guide rails in each pair being laterally spaced-apart a distance so that the outer edges thereof are in position to guide the inner sides of the road wheels of road semitrailers mounted on the deck, the ends of the guide rails disposed adjacent to the ends of the deck being spaced therefrom, the ends of adjacent pairs of guide rails being longitudinally spaced-apart, sets of first container bolsters respectively mountable in first and second positions in spaces between the outer ends of the guide rails and the adjacent end of the deck, each of the sets of first container bolsters in the first positions thereof having the outer edges thereof respectively in alignment with the outer edges of the guide rails substantially to span the distance between the outer ends of the guide rails and the adjacent end of the deck and providing guide surfaces for the road wheels of road semitrailers mounted on the deck, the bolsters in each of the sets of first container bolsters in the second positions thereof having the outer edges thereof respectively in alignment with each other transversely of the deck for supporting one end of the freight container thereon, and sets of second container bolsters respectively mountable in first and second positions in the spaces between the ends of adjacent pairs of the guide rails, each of the sets of second container bolsters in the first positions thereof having the outer edges thereof respectively in alignment with the outer edges of the guide rails substantially to span the distance between the ends of adjacent pairs of the guide rails and providing guide surfaces for the road wheels of road semitrailers mounted on the deck, the bolsters in each of the sets of second container bolsters in the second positions thereof having the outer edges thereof respectively in alignment with each other transversely of the deck for supporting one end of a freight container thereon.

Another object of the invention is to provide a freight transportation of the type set forth wherein side transfer plates are respectively mountable between each of the sets of container bolsters when the container bolsters are in the second positions thereof, each of the side transfer plates spanning the distance between the adjacent ends of the associated set of container bolsters and having the upper surface thereof in horizontal alignment with the upper surfaces of the associated container bolsters to facilitate the sliding of a container onto the container bolsters.

Another object of the invention is to provide a freight transportation system of the type set forth wherein each of the container bolsters has one end thereof pivotally mounted on the deck of the car, whereby each container bolster is pivotally movable between the first and second positions thereof.

Another object of the invention is to provide a freight transportation system of the type set forth wherein the railway car also carries thereon suitable hitch mechanisms mounted between the guide rails and movable between a storage position disposed substantially between the guide rails and an erected position wherein the hitch mechanism engages the fifth-wheel mechanism of a road semitrailer.

Another object of the invention is to provide an improved container bolster for use in a freight transportation system of the type set forth, one form of the container bolster including a fixed retaining wall extending upwardly from a base and another form of the container bolster including a retaining

wall pivotally mounted on the base for movement between a storage position and an erected retaining position.

A further object of the invention is to provide an improved side transfer plate useful in the freight transportation system of the present invention.

Further features of the invention pertain to the particular arrangement of the parts of the freight transportation system and the container bolsters and side transfer plates forming a part thereof, whereby the above-outlined and additional operating features thereof are attained.

The invention, both as to its organization and method of operation, together with further objects and advantages thereof, will best be understood by reference to the following specification taken in connection with the accompanying drawings, in which:

FIG. 1 is a side elevational view of a railway car made in accordance with and embodying therein the principles of the present invention, the car being illustrated with two short containers and one long container mounted thereon, the containers being illustrated in phantom lines for the purposes of clarity;

FIG. 2 is a plan view of the railway car of FIG. 1 and showing the parts arranged to support the two short containers and the one long container illustrated in FIG. 1, the containers again being shown in phantom lines;

FIG. 3 is a view on an enlarged scale with certain parts broken away along the line 3-3 of FIG. 2;

FIG. 4 is a side elevational view similar to the right-hand portion of FIG. 1 and illustrating the mounting on the railway car of FIG. 1 of both a road semitrailer and a container;

FIG. 5 is a further enlarged fragmentary plan view of the right-hand end of the car of FIG. 1 and illustrating in solid lines the positions of the parts for the mounting of a road semitrailer thereon;

FIG. 6 is a view in vertical section along the line 6-6 of FIG. 5;

FIG. 7 is a fragmentary enlarged view in vertical section along the line 7-7 of FIG. 5;

FIG. 8 is a fragmentary plan view on a further enlarged scale illustrating a center bolster and the center side transfer plates in position to receive a container thereon;

FIG. 9 is a side view of the parts of FIG. 8 with certain parts in section and other parts in additional positions to illustrate the positions of the parts when ready to receive a container thereon;

FIG. 10 is a fragmentary view in vertical section on an enlarged scale along the line 10-10 of FIG. 9;

FIG. 11 is a fragmentary enlarged plan view of the intermediate bolsters and the associated side transfer plates, one of the bolsters being shown in position to receive a freight container thereon;

FIG. 12 is a view in vertical section along the line 12-12 of FIG. 11; and

FIG. 13 is a further enlarged fragmentary view in vertical section along the line 13-13 of FIG. 12.

Referring now to FIGS. 1 to 4, inclusive of the drawings, the freight transportation system there illustrated and embodying the features of the present invention, essentially comprises a railway car 100, two shorter freight containers 50, a longer freight container 55 and a road semitrailer 60, the freight containers 50 and/or 55 and/or the road semitrailer 60 being selectively mountable upon the railway car 100. The freight containers 50 are for example 20 feet in length and each includes a pair of end walls 51 and a pair of sidewalls 52 and a bottom wall 53. Disposed in the bottom of the container 50 is a hollow casting 54 having an opening 54a therein to receive a lock pin to be described more fully hereinafter. The longer freight container 55 includes a pair of end walls 56, a pair of sidewalls 57 and a bottom wall 58; as illustrated, the freight container 55 is approximately 40 feet long. The road semitrailer 60 includes the usual cargo carrying body 61 supported by pairs of outer road wheels 62 and pairs of inner road wheels 63 at one end thereof and having a kingpin (not

shown) at the other end thereof. As illustrated, the road semitrailer 60 has a length of approximately 40 feet.

The railway car 100 comprises a pair of longitudinally spaced-apart running gears or trucks 101 carrying flanged rail wheels 102 of standard rail gauge, and an elongated center sill 103, the center sill 103 extending longitudinally between and in bridging relation with the trucks 101. The rail wheels 102 are adapted to engage the rails (not shown) of an associated railway track, and the center sill 103 is of fish-belly configuration as shown in FIGS. 1 and 4. Also, the center sill 103 is of composite construction, including a pair of laterally spaced-apart and longitudinally extending I-beams 104, each of the I-beams 104 having the usual top and bottom flanges 105 and 106 and connecting web 107. In the center sill 103, the top flanges 105 of the two I-beams 104 are arranged in a substantially horizontal plane to define a corresponding substantially horizontal platform for supporting a horizontal deck 120. The I-beams 104 are further interconnected by horizontally arranged plates 108 and vertically arranged plates 109 to provide a strong and rigid construction. There further are provided outer sills in the form of I-beams 110, each of the I-beams 110 having the usual top and bottom flanges 111 and 112 and connecting web 113. The top flanges 111 of the two I-beams 110 are arranged in a substantially horizontal plane, and more particularly in the same horizontal plane as the top flanges 105 on the I-beams 104. Suitable structure, such as plates 114 interconnect the I-beams 110 to the adjacent I-beams 104 intermediate the ends thereof, end sills (not shown) also interconnecting the I-beams at the ends of the railway car 100. There further is provided in each end of the railway car 100 a suitable coupling mechanism 115 for connecting the car 110 in the usual railway train.

The deck 120 is formed of sheet steel and is generally rectangular in plan view as seen in FIG. 2 and has downturned flanges 121 thereon extending therearound, suitable reinforcements being provided as at 122. Mounted upon the top of the deck 120 and extending longitudinally thereof are four pairs of longitudinally spaced-apart guide rails 130A, 130B, 130C and 130D. All four pairs of the guide rails have the same construction, whereby only the construction of the guide rails 130B will be described in detail, like reference numerals with the appropriate suffixes being applied to the parts of the guide rails in the other sets of guide rails.

Referring to FIGS. 2 and 3 of the drawings, it will be seen that the guide rails 130B are laterally spaced-apart with the longitudinal axes thereof essentially parallel and are each formed essentially of a U-shaped channel including a top wall 131B spaced upwardly from the upper surface of the deck 120 by a pair of longitudinally extending sidewalls 132B on the edges of the top wall 131B and extending downwardly therefrom and having the lower edges suitably secured, as by welding, to the deck 120. Each top wall 131B has a plurality of rectangular openings 133B formed therein and spaced-apart equidistantly therealong for the reception of tie-down devices. The spacing between the outer surfaces of the outer walls 132B is slightly less than the distance between the inner surfaces of the inner ties on a road semitrailer, whereby the guide rails 130B serve a guiding function when the road semitrailer 60 is rolled onto the deck 120.

From FIG. 2, it will be seen that one of the guide rails in each pair of guide rails is in longitudinal alignment with one of the guide rails in each of the other pairs of guide rails, whereby one set of four of the guide rails are in longitudinal alignment on one side of the railway car 100 and the other set of four of the guide rails are in longitudinal alignment on the other side of the railway car 100, and further, the outer surfaces of the outer sidewalls 132 on each of the longitudinally aligned sets of four guide rails are in alignment with each other and fall substantially in a common plane, thereby to provide aligned guiding surfaces for the inner wheels 63 of the road semitrailer 60.

The outer or left-hand ends of the end guide rails 130A, as viewed in FIG. 2, are spaced from the adjacent left-hand end

of the railway car 100, while the inner or right-hand ends of the end guide rails 130A are spaced from the adjacent ends of the center guide rails 130B by a predetermined distance. Likewise, the outer or right-hand ends of the end guide rails 130D are spaced from the right-hand ends of the railway car 100 a distance equal to that between the outer ends of the guide rails 130A and the aforementioned or the left-hand end of the railway car 100. Also, the inner or left-hand ends of the end guide rails 130D are spaced from the adjacent ends of the center guide rails 130C a predetermined distance equal to the distance between the adjacent ends of the guide rails 130A and 130B. Finally the inner ends of the center guide rails 130B are spaced from the adjacent inner ends of the center guide rails 130C the same predetermined distance that the guide rails 130A are separated from the guide rails 130B and that the guide rails 130C are separated from the guide rails 130D.

Also mounted on the deck 120 centrally thereof and toward the right-hand end thereof is a hitch mechanism 140, the hitch mechanism 140 being more particularly mounted between the end guide rails 130D and adjacent to the outer or right-hand ends thereof as viewed in FIG. 2. The hitch mechanism 140 more particularly includes a standard 141 pivotally mounted on the deck 120 and carrying on the upper end thereof a fifth-wheel mechanism 142 for engaging the kingpin on the associated road semitrailer 60. A diagonal strut 143 is also provided and is pivoted to the standard 140 intermediate the ends thereof and has the other end connected to a suitable cushioning mechanism, the hitch mechanism 140 preferably being that illustrated and described in the copending U.S. Pat. application, Ser. No. 656,884, filed on Jul. 28, 1967 now U.S. Pat. No. 3,497,169 by Samuel H. Enochian. A second hitch mechanism 145 is mounted on the deck 120 centrally thereof and adjacent to the longitudinal center line thereof, the hitch mechanism 145 more specifically being mounted between the guide rails 130B and toward the right-hand ends thereof as viewed in FIG. 2. The hitch mechanism 145 includes a standard 146 having the lower end thereof pivoted upon the deck 140 and carrying on the upper end thereof a fifth-wheel mechanism 147 for engaging the kingpin of an associated road semitrailer. The hitch mechanism 145 also includes a strut 148 that has one end thereof pivotally connected to the standard 146 intermediate the ends thereof and having the other end thereof connected to a cushioning mechanism mounted on the deck 120. The hitch mechanisms 140 and 145 in the collapsed or retracted positions thereof extend only a short distance above the deck 120, and specifically, do not substantially extend above the tops of the associated guide rails 130, see FIG. 3, wherein it will be seen that the upper surface of the retracted hitch mechanism 145 does not extend substantially above the top walls 131B of the associated guide rails 130B. In the extended or operative positions of the hitch mechanisms 140 and 145, the fifth-wheel mechanisms 142 and 147 respectively are in positions to engage the kingpin of an associated road semitrailer, such as the road semitrailer 60 in FIG. 4.

In accordance with the present invention, it is desirable that it be possible to end-load or "circus-load" the road semitrailer 60 onto the railway car 100 by backing the road semitrailer 60 onto the railway car 100 from an associated ramp (not shown) or across bridging structure extending to an adjacent railway car. During such end-loading of the road semitrailer 60 onto the railway car 100, it is highly desirable that the wheels of the road semitrailer 60, and specifically the inner wheels 63 thereof be guided on the inner surfaces thereof, such as along the outer surfaces of the outer sidewalls 132 of the several guide rails 130. To accomplish such inside guiding of the wheels 63 of the road semitrailer 60 the entire length of the railway car 100, it is necessary to provide guide structure bridging the spaces between the ends of the railway car 100 and the adjacent ends of the guide rails 130A and 130D, as well as the spaces between the adjacent ends of the guide rails 130A and 130B, the adjacent ends of the guide rails 130B and 130C and the adjacent ends of the guide rails 130C and 130D. To this end, there have been provided end container bolsters

150A and 150B, intermediate container bolsters 200A and 200B and center container bolsters 150C and 150D which are identical in construction to the end container bolsters 150A and 150B, respectively. It is pointed out that although the container bolsters 150A and 150C are identical in construction, and the container bolsters 150B and 150D are identical in construction, the container bolsters 150B and 150D are actually formed as the mirror images of the container bolsters 150A and 150C, respectively. Accordingly, like reference numerals with suitable suffixes have been applied to like parts in describing each of the container bolsters 150A, 150B, 150C and 150D.

Referring now particularly to FIGS. 2 and 8 to 10 of the drawings, the construction and operation of the center container bolster 150C will be described. As illustrated in the FIGS. noted, the center container bolster 150C extends laterally of the railway car 100 and is in the container-receiving position thereof, one of the shorter freight containers 50 being illustrated in dashed lines associated therewith and mounted thereon. Referring specifically to FIG. 10, the center container bolster 150C includes a generally rectangular base 151C that is of composite structure and includes a base plate 152C that is rectangular in shape and is substantially flat and adapted to rest upon the upper surface of the associated deck 120. Extending upwardly from the base plate 152C is an inner sidewall 153C that has integral therewith on the upper edge thereof an upper plate 154C that overlies and substantially covers the base plate 152C. Extending upwardly from the outer edge of the base plate 152C is an outer sidewall 155C that extends upwardly well above the upper plate 154C and terminates in a rounded edge 156C, an inwardly and downwardly sloping guide wall 157C extending from the rounded edge 156C downwardly to a vertically oriented retainer wall 158C, the lower edge of the retainer wall 158C abutting against and being fixedly secured to the upper plate 154C, such as by welding. Referring to FIG. 8, it will be seen that the outer ends of the guide wall 157C are cut back at an angle and that the outer ends of the retainer wall 158C are also directed rearwardly toward the outer sidewall as at 159C. There is thus provided a hollow base 151C within and upon which all of the other parts of the center container bolster 150C are mounted.

One end of the center container bolster 150C is pivotally secured to the deck 120 by means of a pivot pin 160C, see FIG. 9 of the drawings. As illustrated, the adjacent end of the hollow base 151C is closed by an end wall 161C and also disposed within the hollow base 151C is a bearing block 162C, the bearing block 162C being fixedly secured within the hollow base 151C, as by welding. The bearing block 162C has a vertically extending opening 163C therein, there being provided aligned openings 164C in the upper plate 154C and like openings in the base plate 152C, the deck 120 and the underlying flange 105 and a reinforcing plate 116 disposed therebelow. The pivot pin 160C more specifically includes an enlarged head 165C at the upper end thereof which is received within the opening 164C and a lower threaded shank 166C that threadedly receives a nut 167C to hold all of the parts in the assembled position.

By this construction, the entire center container bolster 150C may pivot about the vertical axis of the pivot pin 160C along the deck 120 between first and second positions therefor. In one of the positions of the center container bolster 150C, the longitudinal axis thereof is aligned laterally of the railway car 100 as illustrated in FIGS. 2, 8 and 9, so as to receive and support one end of a container 50 thereon. In order to hold the center container bolster 150C in the supporting position illustrated, the other end of the hollow base 151C is provided with a bolster lock pin 170C. More specifically, the end of the center container bolster 150C opposite the pivot pin 160C has a reinforcing end wall 171C thereon and disposed therein is a reinforcing block 172C held in position, such as by welding. The reinforcing block 172C has a vertically arranged opening 173C therein, an enlarged open-

ing 174C being provided in the upper plate 154C in alignment with the opening 173C and like aligned opening being provided in the base plate 152C, an opening 125 being provided in the deck 120, and like openings being provided in the flange 111 and a reinforcing block 117 secured to the underside of the flange 111. More specifically, the bolster lock pin 170C has an enlarged head 175C at the upper end which is received in the opening 174C and a shank 176C that extends downwardly through the aligned openings mentioned. It will be understood that the bolster lock pin 170C can be manually inserted in and removed from the several aligned openings noted, the bolster lock pin 170C serving in the position illustrated in FIG. 9 to hold and to lock the center container bolster 150C in the container-supporting position thereof. As is diagrammatically illustrated in FIG. 2 of the drawings, the center container bolster 150C may be pivoted after removal of the bolster lock pin 170C in the direction of the arrows to a position wherein the opening 173C is above an opening 126 in the deck 120 for the reception of the bolster lock pin 170C, thereby to lock the center container bolster 150C in a position wherein the longitudinal axis thereof is essentially parallel to the longitudinal axis of the railway car 100, all as will be explained more fully hereinafter.

In order to restrain movement of the associated freight container 50 laterally of the railway car 100, the center container bolster 150C is provided with a guide member 180C pivotally mounted thereon. To this end, the end wall 171C of the center container bolster 150C has mounted thereon an outwardly extending boss 181C. The guide member 180C is provided with a pair of ears 182C which straddle the boss 181C and are pivoted thereto by a pin 183C. By this construction, the guide member 180C may be pivoted between a retracted position illustrated by dashed lines in FIG. 9 and a guiding position illustrated by solid lines in FIG. 9. It will be seen that the boss 181C and the ears 182C have openings therein which are in alignment when the guide member 180C is in the guiding position thereof, these openings receiving therethrough a guide lock pin 185C, the guide lock pin 185C being permanently secured to the center container bolster 150C by means of a chain 186C and having at the outer end thereof a toggle 187C. The outer end of the guide member 180C carries thereon a guide surface 184C which inclines downwardly and inwardly when the guide member 180C is in the guiding position thereof as illustrated by solid lines in FIG. 9. Finally, there is provided in association with the guide member 180C a container lock pin 190C carried thereby and engageable in the opening 54a in the corner casting 54 of the associated freight container 50. It will be appreciated therefore that the freight container 50 will be locked to the container bolster 150C in the mounted position thereof by means of the container lock pin 190C.

The container bolster 150C is useful not only to support the freight container 50, but also to span the space between the adjacent ends of the guide rails 130B and 130C whereby to assist in guiding the adjacent inner wall of the tire 63 of the road semitrailer 60 during the end-loading thereof onto the railway car 100. During such end-loading of the road semitrailer 60, it also is preferred that the guide member 180C be placed in the retracted position thereof by removal of the guide lock pin 185C so as to permit pivoting of the guide member 180C to the lower and retracted position thereof.

The container bolster 150A is constructed identical to the container bolster 150C described in detail above, whereby a further description of the container bolster 150A will be omitted in the interest of brevity. The container bolsters 150B and 150D are both constructed as the mirror image of the container bolster 150C, but otherwise are identical in construction therewith, whereby a detailed description of the container bolsters 150B and 150D will not be given in the interest of brevity.

Referring now to FIGS. 5 and 11 to 13, inclusive, of the drawings, the details of construction of the intermediate con-

tainer bolster 200A are there illustrated. As shown in the FIGS. noted, the intermediate container bolster 200A extends laterally of the railway car 100 and is in the container-receiving position thereof, one of the shorter freight containers 50 being illustrated in dashed lines associated therewith and mounted thereon. Referring specifically to FIG. 13, the intermediate container bolster 200A includes a generally rectangular base 201A that is of composite structure and includes a base plate 202A that is rectangular in shape and is substantially flat and is adapted to rest upon the upper surface of the associated deck 120. Extending upwardly from the base plate 202A is an inner sidewall 203A that has integral therewith on the upper edge thereof an upper plate 204A that overlies the base plate 202A. Extending upwardly from the outer edge of the base plate 202A is an outer sidewall 205A. The ends of the base 201A are closed by end walls 206A, whereby to provide a base 201A of essentially hollow construction. Formed in the upper plate 204A is an essentially rectangular opening 207A providing access to the interior of the hollow base 201A and an inwardly and downwardly sloping wall 208A extending downwardly from the upper plate 204A and joining a longitudinally extending wall 209A in the base 201A that extends downwardly and joins the base plate 202A.

Pivotally mounted in the hollow base 201A is a buffer bar 210A that is generally L-shaped in cross section and has a length slightly less than the length of the opening 207A, whereby to be mountable therein. As illustrated, the buffer bar 210A includes a positioning arm 211A and a retaining arm 212A disposed essentially normal to each other, there being a longitudinally extending opening 213A at the juncture thereof. The retaining arm 212A has the inner surface thereof cut away to provide a guide wall 214A that slopes downwardly and inwardly toward the base 201A when the parts are in the position illustrated in FIGS. 11 to 13. In order pivotally to mount the buffer bar 210A within the base 201A, a shaft 215A is provided extending through the opening 213A and through aligned openings in the end walls 206A of the base 201A as well as through a web 216A integral with the base 201A and extending inwardly into a slot 217A provided in the buffer bar 210A.

The buffer bar 210A is pivotally mounted on and within the base 201A for pivotal movement between a storage position within the base 201A and a guiding position extending upwardly above the base 201A, the buffer bar 210A being held in one or the other of its positions by means of a buffer bar lock pin 220A. In order to guide and hold the lock pin 220A, the base 201A has a guideway 218A formed in the base 201A and defined by the base plate 202A, an opening in the wall 209A and a longitudinally extending wall 219A in the base 201A. As illustrated, the lock pin 220A includes a shank 221A disposed in the guideway 218A and an operating handle 222A disposed exteriorly of the base 201A, the lock pin 220A being shiftable between a locking position illustrated by solid lines in FIG. 13 and a release position illustrated by dashed lines in FIG. 13. When it is desired to place and hold the buffer bar 210A in the guiding position thereof, the lock pin 220A is withdrawn or moved to the release position illustrated by dashed lines in FIG. 13, and thereafter the buffer bar 210A may be moved to the solid line position in FIG. 13; subsequent movement of the lock pin 220A to the locking position illustrated in solid lines in FIG. 13 will place the outer end of the shank 221A below an abutment surface 223A on the positioning arm 211A of the buffer bar 210A, thus to hold the buffer bar 210A in the position illustrated in solid lines in FIG. 13. If it is desired to move the buffer bar 210A to the storage position illustrated by dashed lines in FIG. 13, the lock pin 220A is shifted to the release position illustrated by dashed lines in FIG. 13, after which the buffer bar 210A may be pivoted to the storage position illustrated by dashed lines in FIG. 13. Thereafter the lock pin 220A is returned to the locking position thereof illustrated by solid lines in FIG. 13, whereby to place the outer end of the shank 221A in position to engage a second abutment surface 224A on the positioning arm 211A,

thus to prevent movement of the buffer bar 210A out of the retracted position thereof until the lock pin 220A is withdrawn.

One end of the intermediate container bolster 200A is pivotally secured to the deck 120 by means of a pivot pin 230A, see FIG. 12 of the drawings. As illustrated, the adjacent end of the hollow base 201A is provided with an opening 234A in the upper plate 204A and like openings are provided in the other parts of the hollow base 201A and in the deck 120 and the underlying flange 105 and the reinforcing plate 116 disposed therebelow. The pivot pin 230A more specifically includes an enlarged head 235A at the upper end thereof which is received within the opening 234A and a lower threaded shank 236A that threadably receives a nut 237A to hold all of the parts in the assembled position.

By this construction, the entire intermediate container bolster 200A may pivot about the vertical axis of the pivot pin 230A along the deck 120 between first and second positions thereof. In one of the positions of the intermediate container bolster 200A, the longitudinal axis thereof is aligned laterally of the railway car 100 as illustrated to the left in FIGS. 1 and 2 and as illustrated in FIGS. 3 and 11 to 13, inclusive, so as to receive and support one end of a container 50 thereon. In order to hold the intermediate container bolster 200A in the supporting position illustrated, the other end of the hollow base 201A is provided with a bolster lock pin 240A, a reinforcing block (not shown) being provided in the end of the hollow base 201A opposite the pivot pin 230A and having a vertically arranged opening therein in alignment with an enlarged opening 244A in the upper plate 204A and a like aligned opening in the base plate 202A. The bolster lock pin 240A has an enlarged head 245A at the upper end which is received in the opening 244A and a shank 246A that extends downwardly through the aligned openings mentioned. It will be understood that the bolster lock pin 240A can be manually inserted in and removed from the aligned openings mentioned, the bolster lock pin 240A serving in the position illustrated in FIGS. 11 and 12 to hold the intermediate container bolster 200A in the container-supporting position thereof. As is illustrated to the left in FIG. 2 of the drawings, the intermediate container bolster 200A may be pivoted after removal of the lock pin 240A in the directions of the arrows to a position wherein the openings therein are above an opening 126 in the deck 120 for the reception of the bolster lock pin 240A, thereby to lock the intermediate container bolster 200A in a position wherein the longitudinal axis thereof is essentially parallel to the longitudinal axis of the railway car 100, all as illustrated on the right-hand end of the railway car 100 in FIG. 2 and as will be explained more fully hereinafter.

In order to restrain movement of the associated freight container 50 laterally of the railway car 100, the intermediate container bolster 200A is provided with a guide member 250A pivotally mounted thereon. To this end, the end wall 206A opposite the pivot pin 230A has mounted thereon an outwardly extending boss 251A. The guide member 250A is provided with a pair of ears 252A which straddle the boss 251A and are pivoted thereto by a pin 253A. By this construction, the guide member 250A may be pivoted between a retracted position illustrated by solid lines in the upper portion of FIG. 11 and by dashed lines in FIG. 12 and a guiding position illustrated by solid lines in the lower portion of FIG. 11 and in FIG. 12. It will be seen that the boss 251A and the ears 252A have openings therein which are in alignment when the guide member 250A is in the guiding position thereof, these openings receiving therethrough a guide lock pin 255A, the guide lock pin 255A being permanently secured to the intermediate container bolster 200A by means of a chain 256A and having at the outer end thereof a toggle 257A. The outer end of the guide member 250A carries thereon a guide surface 254A which inclines downwardly and inwardly when the guide member 250A is in the guiding position thereof as illustrated in the lower portion of FIG. 11 and by the solid line positions of FIGS. 12 and 13. Finally, there is provided in association

with the guide member 250A a container lock pin 260A carried thereby and engageable with the opening 54a in the corner casting 54 of the associated freight container 50. It will be appreciated therefore that the freight container 50 will be locked to the intermediate container bolster 200A in the mounted position thereof by means of the container lock pin 260A.

The intermediate container bolster 200A is useful not only to support the freight container 50, but also to span the space between the adjacent ends of the guide rails such as the guide rails 130C and 130D as illustrated to the right in FIGS. 1 and 2, whereby to assist in guiding the adjacent inner wall of the tire 63 on the road semitrailer 60 during the end-loading thereof onto the railway car 100. During such end-loading of the road semitrailer 60, it also is preferred that the guide member 250A be placed in the retracted position thereof by removal of the guide lock pin 255A so as to permit pivoting of the guide member 250A to the lower and retracted position thereof.

The intermediate container bolster 200B is the mirror image of the intermediate container bolster 200A, but otherwise is identical in construction therewith, whereby a detailed description of the intermediate container bolster 200B will not be given in the interest of brevity, the parts of the container bolster 200B that are like the parts of the container bolster 200A having like reference numerals applied thereto with the suffix B added thereto.

In order to facilitate the side loading of the containers 50 and 55 onto the associated container bolsters 150 when the container bolsters 150 are arranged laterally of the railway car 100, a plurality of side transfer plates 270 have been provided, one of the side transfer plates 270 being provided between each pair of laterally arranged container bolsters 150 and between each pair of laterally arranged intermediate container bolsters 200. Referring to FIGS. 8, 9, 11 and 12 of the drawings, it will be seen that the side transfer plates 270 each include a generally rectangular hollow base 271 which in turn is formed of a base plate 272, an inner sidewall 273, an upper plate 274 and an outer sidewall 275, all joining to provide the hollow rectangular base 271. The outer sidewall 275 extends upwardly above the upper plate 274 and has integral therewith a downwardly and inwardly inclined guide wall 277 that merges into a retainer wall 278 that is generally vertically arranged and is joined to the upper plate 274.

In order removably to position the side transfer plates 270 upon the deck 120, there is provided a pair of plate lock pins 280 each including an enlarged head 281 and an elongated shank 282. Associated with each of the lock pins 280 is a bearing block 383 mounted in and essentially closing one end of the side transfer plate 270 and being fixedly secured thereto, as by welding, and having a vertically arranged opening therein for receiving the lock pin 280 therethrough. A slightly enlarged opening 284 is formed in the upper plate 274 to receive the enlarged head 281, the opening 284 is in vertical alignment with the opening through the bearing block 283 and being in alignment with a like opening in the base plate 272 and an opening 127 in the deck 120. By this arrangement, the side transfer plates 270 can be fixedly positioned upon the deck 120 during the side loading of one of the containers 50 or 55 thereacross as the case may be.

When it is desired to place the container bolsters 150 and 200 in positions wherein the longitudinal axes thereof are arranged substantially parallel to the longitudinal axis of the railway car 100, it is convenient to remove the side transfer plates 270 from the operative positions thereof and to place them in storage wells 290 provided therefor in the deck 120, see FIGS. 2, 5 and 7 of the drawings. Each of the wells 290 includes vertically extending sidewalls 291 carrying on the lower edges therein turned flanges 292 which in turn support a bottom wall 293, the well 290 illustrated in FIG. 7 being arranged to accommodate two of the side transfer plates 270, three such wells being provided, one each associated with the guide rails 130A, 130C, and 130D. Similar wells 295 are provided ad-

jacent to each end of the railway car 100 to accommodate but a single side transfer plate 270.

The several different methods of utilizing the freight transportation system of the present invention will now be described in detail. The railway car 100 may be used to transport any one of the following combinations of freight containers and road semitrailers, namely: four of the 20 feet freight containers 55; two of the 20 feet freight containers 50, together with one of the 40 feet freight containers 55; two of the road semitrailers 60; one of the 40 feet freight containers 55 and one of the road semitrailers 60; and two of the 20 feet freight containers 50 and one of the road semitrailers 60. The above combinations of containers and road semitrailers may also be moved onto the railway car 100 in one of several ways; for example, the freight containers 50 and 55 may be placed thereon by an overhead crane or may be shifted thereonto from the side by a side transfer mechanism; the road semitrailer 60 may be end-loaded or "circus loaded" or may be loaded by means of an overhead crane.

Considering first the loading illustrated in FIGS. 1 and 2 of the drawings, the parts there illustrated are in the positions in which they are placed when two of the 20 feet freight containers 50 are to be loaded onto one end of the railway car 100 and one of the 40 feet freight containers 55 is to be loaded onto the other end of the railway car 100. With the parts in the positions illustrated in FIGS. 1 and 2, the freight containers 50 and 55 may be loaded into position either by an overhead crane or by a side transfer operation.

Assuming that the freight containers 50 and 55 are to be loaded onto the railway car 100 by means of an overhead crane, it will be noted that the end container bolsters 150A and 150B are placed in the positions wherein they are disposed laterally of the railway car 100, i.e., the bolster lock pins 170A and 170B or disposed in the openings 125 in the deck 120. This places the upper surfaces of the bolster bases 151A and 151B in the same horizontal plane and in longitudinal alignment. The center container bolsters 150C and 150D are likewise placed in the positions thereof disposed laterally of the railway car 100, the bolster lock pins 170C and 170D being disposed in the associated openings 125 in the deck 120. And likewise the intermediate bolsters 200A and 200B disposed to the left in FIGS. 1 and 2 are also placed in the laterally extending positions thereof with the bolster lock pins 240A and 240B in the associated openings 125 in the deck 120. In conjunction with the intermediate bolsters 200A and 200B, it is noted that the buffer bars 210A and 210B, it is noted that the buffer bars 210A and 210B, respectively, are placed in the guiding positions thereof and are held therein by the buffer bar lock pins 220A and 220B, respectively. The side transfer plates 270 may be either in the operative positions thereof or in the storage positions thereof, the placement of the side transfer plates 270 being of no consequence in this arrangement of the parts. Likewise, the intermediate container bolsters 200A and 200B disposed to the right of the railway car 100 may be either in the container supporting positions or in the guiding positions thereof, these parts actually being illustrated in the guiding positions in FIGS. 1 and 2 of the drawings; it is necessary only that the buffer bars 210A and 210B of this set of intermediate container bolsters be in the storage positions thereof.

It also is pointed out that the hitch mechanisms 140 and 145 are in the collapsed or retracted positions thereof so as not to interfere with the placement of the containers 50 and 55 on the container bolsters.

Finally, it is pointed out that the guide members 180 and the guide members 250 are all in the down or retracted positions thereof, the associated guide lock pins 185 and 255 having been removed to permit such positioning of the guide members 180 and 250, respectively.

Assuming next that one of the 20 feet freight containers 50 is to be lowered into position by a crane, and specifically the freight container 50 disposed to the left in FIG. 1, it will be noted that the guide walls 157A and 157B, as well as the guide

walls 214A and 214B on the four cooperating container bolsters are all in position to direct and guide the freight container 50 into the proper position. When the freight container 50 is in the proper position upon the four cooperating container bolsters, the guide members 180A and 180B and the guide members 250A and 250B are moved into the guiding positions thereof, and the guide lock pins 185 and 255 are inserted to hold the parts in these positions. This will also serve to place the container lock pins 190A and 190B and the container lock pins 260A and 260B in the cooperating openings 54a in the base of the container 50, thus to lock the container 50 to the several container bolsters 150A, 150B, 200A and 200B.

It will be understood that the intermediate freight container 50 will be moved by a crane into an operative position upon the associated cooperating container bolsters 200A, 200B, 150C and 150D, after which the associated guide members 250A, 250B, 180C and 180D are moved into the operative positions and locked therein by the appropriate associated guide lock pins 255A, 255B, 185C and 185D, the associated container lock pins 260A, 260B, 190C and 190D being also placed in the locking positions thereof with respect to the freight container 50.

Next, the 40 feet freight container 55 is in a like manner moved into position upon the cooperating container bolsters 150A, 150B, 150C and 150D, the guide surfaces 157A, 157B, 157C and 157D aiding in guiding the freight container 55 to the proper position upon the several container bolsters. Thereafter the guide members 180A, 180B, 180C and 180D are moved into the operative positions with respect to the freight container 55, the container lock pins 190A, 190B, 190C and 190D being also placed in the operative positions with respect to the freight container 55. In this manner, the freight container 55 is locked to the four cooperating container bolsters.

Assuming now that the freight containers 50 and 55 are to be loaded onto the railway car 100 by a side transfer operation, the several bolsters are first arranged in the positions illustrated in FIG. 2 and as described above with respect to the crane loading or overhead loading of the freight containers 50 and 55 onto the railway car 100. If the containers are to be side transferred onto the railway car 100 from the side thereof disposed to the top in FIG. 2, for example, the the guide members 180A and 180C, 180D, 250A and 250B disposed on the other side or to the bottom in FIG. 2 are placed in the operative positions thereof, and the several guide lock pins 185A, 185C, 185D, 255A and 255B are placed in the locking positions thereof. It also is necessary to remove the side transfer plates 270 from the several wells 290 and 295 and to place the side transfer plates 270 in positions between laterally aligned pairs of the container bolsters. For example, one of the side transfer plates 270 is placed between the laterally aligned bolsters 150A and 150B at the lefthand end of the railway car 100 as viewed in FIG. 2, the upper surface of the base 271 thereof being in alignment with the upper surfaces of the bases 151A and 151B; likewise, the retainer wall 278 is in lateral alignment with the retainer walls 158A and 158B. It will be understood that the side transfer plate 270 will be held in position by the plate lock pins 280 engaging in the associated openings 127 in the deck 120. Side transfer plates 270 are also provided between the laterally aligned pairs of intermediate container bolsters 200A and 200B disposed on the lefthand portion of the railway car 100 as viewed in FIG. 2 and also between the center bolsters 150C and 150D and the end bolsters 150A and 150B disposed at the right-hand end of the railway car 100. The freight containers 50 and 55 are then slid onto the several container bolsters, 150C and 150D having the side guide walls 159A, 159B, 159C and 159D thereon which tend to center and guide the freight containers 50 and 55 during the side transfer thereof onto the several cooperating container bolsters. The freight containers 50 and 55 eventually bump up against the guide members 180 and 250 that are in the operative positions, thereby to stop side transfer of the

freight containers. The guide members 180 and 250 positioned on the side of the railway car 100 disposed to the top in FIG. 2 are then moved into the upper or operative positions and are secured therein by means of the associated lock pin 185 and 255, thus to position the freight containers 50 and 55 upon the cooperating container bolsters. In addition, the several container lock pins 190 and 260 are now in locking positions within the openings 54a, for example, in the containers 50, thereby to lock the containers on the associated container bolsters.

Referring to FIGS. 4 and 5 of the drawings, the positions of the parts to accommodate the end-loading of the road semitrailer 60 onto the railway car 100 are there illustrated. First, it is noted that the side transfer plates 270 have been removed from the operative positions thereof and placed in the storage wells 290 and 295 provided therefor. Assuming that the container bolsters were initially disposed laterally of the railway car 100, the bolster lock pins 170A and 170B of the right-hand end bolsters 150A and 150B are removed and these bolsters are pivoted about the pins 160A and 160B, respectively, to positions extending longitudinally of the railway car 100, after which the bolster lock pins 170A and 170B are reinserted in the bolsters and into openings 126 in the deck 120. If the guide members 180A and 180B have been in the operative positions thereof, the guide lock pins 185A and 185B are removed and the guide members 180A and 180B are pivoted to the lower or retracted positions thereof. With the parts in these positions, it will be appreciated that the outer surfaces of the sidewalls 155A and 155B are in longitudinal alignment with the outer surfaces of the sidewalls 132D on the right-hand pair of guide rails 130D, and more particularly substantially span the space between the right-hand ends of the guide rails 130D and the adjacent or right-hand of the railway car 100.

The intermediate bolsters 200A and 200B are also moved from positions extending laterally of the railway car 100, if necessary, and the lock pins 240A and 240B inserted in openings 126 in the deck 120 to hold the intermediate bolsters 200A and 200B in the positions illustrated in FIG. 5. The guide members 250A and 250B are also placed in the retracted position by removing the guide lock pins 255A and 255B, thus to place the parts in the position illustrated in FIG. 5. The outer surface of the walls 205A and 205B are now in longitudinal alignment with the outer surfaces of the sidewalls 132C and 132D of the guide rails 130C and 130D, respectively, the intermediate bolsters 200A and 200B serving essentially to span the distance between the adjacent ends of aligned pairs of the guide rails 130C and 130D.

The parts are now in a position to end-load the road semitrailer 60 from the right-hand end of the railway car 100 as viewed in FIGS. 4 and 5. The road semitrailer 60 is backed onto the railway car 100 from a ramp or bridging structure on an adjacent railway car, the inner wheels 63 having the sides thereof guided in turn by the outer surfaces of the end container bolsters 150A and 150B, by the outer surfaces of the guide rails 130D, by the outer surfaces of the intermediate bolsters 200A and 200B and finally by the outer surfaces of the guide rails 130C. Preferably, the hitch mechanism 140 is raised by means of an associated tractor (not shown) to an operative position and the kingpin on the road semitrailer 60 is transferred from the fifth-wheel mechanism on the tractor to the fifth-wheel mechanism 142 on the hitch mechanism 140, thus to place the parts in the position illustrated in FIG. 4.

It will be understood that the container bolsters 150A, 150B, 150C, 150D, 200A and 200B on the lefthand end of the railway car 100 as viewed in FIG. 2 may also be arranged in longitudinally extending positions, whereby also to serve as guides for the inner wheels 63 of the associated road semitrailer 60, whereby a road semitrailer 60 may also be mounted on the lefthand end of the railway car as viewed in FIG. 2 and positioned thereon by end-loading from the right-hand end of the railway car 100.

From the above, it will be seen that there has been provided a freight transportation system and parts therefor that fulfill all of the objects set forth hereinabove.

While there have been described what are at present considered to be certain preferred embodiments of the invention, it will be understood that various modifications may be made therein, and it is intended to cover in the appended claims all such modifications as fall within the true spirit and scope of the invention.

I claim:

1. A freight transportation system comprising a railway car including longitudinally spaced-apart running gears having rail wheels, a longitudinally extending deck bridging said running gears and overlying said rail wheels for supporting both road semitrailers and containers on said deck, pairs of longitudinally extending end guide rails respectively mounted on said deck and laterally spaced-apart a distance so that the outer edges thereof are in position to guide the inner sides of the road wheels of road semitrailers mounted on said deck, pairs of longitudinally extending center guide rails respectively mounted on said deck between said end guide rails with the outer edges of said center guide rails in alignment with the outer edges of said end guide rails and thereby spaced-apart a distance to guide the inner sides of the road wheels of road semitrailers mounted on said deck, the ends of said pairs of end guide rails disposed adjacent to the ends of said deck being spaced therefrom a first predetermined distance, the ends of the pairs of said center guide rails disposed toward each other being longitudinally spaced-apart a second predetermined distance, the ends of said pairs of end guide rails and the ends of said pairs of center guide rails disposed toward each other being longitudinally spaced-apart a third predetermined distance, sets of end container bolsters respectively mountable in first and second positions in the spaces between the outer ends of said end guide rails and the adjacent end of said deck, each of said sets of end container bolsters in the first positions thereof having the outer edges thereof respectively in alignment with the outer edges of said end guide rails substantially to span the distance between the outer ends of said end guide rails and the adjacent end of said deck and providing guide surfaces for the road wheels of road semitrailers mounted on said deck, the bolsters in each of said sets of end container bolsters in the second positions thereof having the outer edges thereof respectively in alignment with each other transversely of said deck for supporting one end of a freight container thereon, sets of center container bolsters respectively mountable in first and second positions in the spaces between the ends of adjacent pairs of said center guide rails, each of said sets of center container bolsters in the first positions thereof having the outer edges thereof respectively in alignment with the outer edges of said guide rails substantially to span the distance between the ends of adjacent pairs of said center guide rails and providing guide surfaces for the road wheels of road semitrailers mounted on said deck, the bolsters in each of said sets of center container bolsters in the second positions thereof having the outer edges thereof respectively in alignment with each other transversely of said deck for supporting one end of a freight container thereon, and sets of intermediate container bolsters respectively mountable in first and second positions in the spaces between the ends of adjacent pairs of said end guide rails, each of said sets of intermediate container bolsters in the first positions thereof having the outer edges thereof respectively in alignment with the outer edges of said guide rails substantially to span the distance between the ends of adjacent pairs of said end guide rails and said center guide rails and providing guide surfaces for the road wheels of road semitrailers mounted on said deck, the bolsters in each of said sets of intermediate container bolsters in the second positions thereof having the outer edges thereof respectively in alignment with each other transversely of said deck for supporting one end of a freight container thereon, said end container bolsters and said center container bolsters each including a generally rectangular base having an

upper surface and one longitudinally extending side that is disposed in alignment with the outer side of the associated guide rail when said bolster is in the first position thereof, and a retaining wall fixedly mounted on and extending upwardly from said base adjacent to said one side thereof for engaging the side of the associated container to retain it on said bolster, each of said intermediate container bolsters including a generally rectangular base having an upper surface and one longitudinally extending side that is disposed in alignment with the outer side of the associated guide rail when said intermediate container bolster is in the first position thereof, and a buffer bar pivotally mounted on said last-mentioned base for pivotal movement between a storage position extending upwardly above said last-mentioned base for engaging the side of an associated container to retain it on said intermediate container bolster.

2. The freight transportation system set forth in claim 1, wherein said end guide rails and said center guide rails have substantially the same length, and said second predetermined distance is equal substantially to said third predetermined distance and is equal substantially to twice the first predetermined distance.

3. The freight transportation system set forth in claim 1, and further comprising a first hitch mechanism mounted on said deck between one pair of said end guide rails adjacent to one end of said car, said first hitch mechanism being movable between a retracted position substantially disposed between said guide rails and an erected position for engaging the fifth-wheel mechanism of a road semitrailer mounted on said deck, and a second hitch mechanism mounted on said deck between the pair of said center guide rails disposed away from said first hitch mechanism and disposed toward said center container bolsters, said second hitch mechanism being movable between a retracted position substantially disposed between said guide rails and an erected position for engaging the fifth-wheel mechanism of a road semitrailer mounted on said deck.

4. A container bolster for use with a railway car including a deck having first and second openings therein and pairs of longitudinally aligned guide rails mounted on the deck, said bolster being disposed on the deck and having a spanning position for spanning the space between the ends of longitudinally aligned guide rails mounted on the deck and having a support position for supporting one end of a container, said bolster comprising a generally rectangular base having one longitudinally extending side that is disposed in alignment with the outer side of the associated guide rails when said bolster is in the spanning position thereof, a pivot pin mounted on said base adjacent to one end thereof and pivotally movable on the associated deck to accommodate pivotal movement of said bolster between the spanning and support positions thereof, the outer end of said base having an opening therein alignable with one of the first openings in the associated deck located to place said bolster in the spanning position thereof and with one of the second openings in the associated deck to place said bolster in the supporting position thereof, a bolster lock pin engageable in said bolster opening and in a selected one of the openings in the associated deck securely to mount said bolster in the selected one of its positions, said base having an opening in the top thereof adjacent to said one longitudinally extending side, a buffer bar pivotally mounted on said base within said opening for pivotal movement between a storage position within said base and a guiding position extending upwardly above said base, said buffer bar having a longitudinally extending abutment surface for engaging the side of an associated container to retain it on said bolster, a buffer bar lock pin shiftably mounted in said base and engageable with said buffer bar to hold said buffer bar in a selected one of its positions, a guide member pivotally mounted on said other end of said base and pivotal between a retracted position wherein it is disposed below the upper surface of said base and a guiding position wherein it extends upwardly above said base and in position to engage said side of an associated container, and a guide lock pin shiftably mounted in said base and engageable

with said guide member for holding said guide member in guiding position thereof.

5. The container bolster set forth in claim 4, wherein said buffer bar has a guide surface thereon extending from adjacent the upper edge thereof inwardly and downwardly toward the upper surface of said base when said buffer bar is in the guided position thereof.

6. A freight transportation system comprising a railway car including longitudinally spaced-apart running gears having rail wheels, a longitudinally extending deck bridging said running gears and overlying said rail wheels for supporting both road semitrailers and containers on said deck, pairs of longitudinally extending end guide rails respectively mounted on said deck and laterally spaced-apart a distance so that the outer edges thereof are in position to guide the inner sides of the road wheels of road semitrailers mounted on said deck, pairs of longitudinally extending center guide rails respectively mounted on said deck between said end guide rails with the outer edges of said center guide rails in alignment with the outer edges of said end guide rails and thereby spaced-apart a distance to engage the inner sides of the road wheels of road semitrailers mounted on said deck, the ends of said pairs of end guide rails disposed adjacent to the ends of said deck being spaced therefrom a first predetermined distance, the ends of the pairs of said center guide rails disposed toward each other being longitudinally spaced-apart a second predetermined distance, the ends of said pairs of end guide rails and the ends of said pairs of said center guide rails disposed toward each other being longitudinally spaced-apart a third predetermined distance, sets of end container bolsters respectively mountable in first and second positions in the spaces between the outer ends of said end guide rails and the adjacent end of said deck, each of said sets of end container bolsters in the first positions thereof having the outer edges thereof respectively in alignment with the outer edges of said end guide rails substantially to span the distance between the outer ends of said end guide rails and the adjacent end of said deck and providing guiding surfaces for the road wheels of road semitrailers mounted on said deck, the bolsters in each of said sets of end container bolsters in the second positions thereof having the outer edges thereof respectively in alignment with each other transversely of said deck for supporting one end of a freight container thereon, sets of center container bolsters respectively mountable in first and second positions in the spaces between the ends of adjacent pairs of said center guide rails, each of said sets of center container bolsters in the first positions thereof having the outer edges thereof respectively in alignment with the outer edges of said guide rails sub-

stantially to span the distance between the ends of adjacent pairs of said center guide rails and providing guide surfaces for the road wheels of road semitrailers mounted on said deck, the bolsters in each of said sets of said center bolsters in the second positions thereof having the outer edges thereof respectively in alignment with each other transversely of said deck for supporting one end of a freight container thereon, said end container bolsters and said center container bolsters each including a generally rectangular base having an upper surface and one longitudinally extending side that is disposed in alignment with the outer side of the associated guide rail when said bolster is in the first position thereof, and a retaining wall fixedly mounted on and extending upwardly from said base adjacent to said one side thereof for engaging the side of the associated container to retain it on said bolster, and sets of intermediate container bolsters respectively mountable in first and second positions in the spaces between the ends of adjacent pairs of said end guide rails and said center guide rails, each of said sets of intermediate container bolsters in the first positions thereof having the outer edges thereof respectively in alignment with the outer edges of said guide rails substantially to span the distance between the ends of adjacent pairs of said end guide rails and said center guide rails and providing guide surfaces for the road wheels of road semitrailers mounted on said deck, the bolsters in each of said sets of intermediate container bolsters in the second positions thereof having the outer edges thereof respectively in alignment with each other transversely of said deck for supporting one end of a freight container thereon, each of said intermediate container bolsters containing a generally rectangular base having an upper surface and one longitudinally extending side that is disposed in alignment with the outer side of the associated guide rail when said intermediate container bolster is in the first position thereof, and a buffer bar pivotally mounted on said last-mentioned base for pivotal movement between a storage position within said last-mentioned base and a guiding position extending upwardly above said last-mentioned base for engaging the side of an associated container to retain it on said intermediate container bolster, and side transfer plates each respectively mountable between one of said sets of container bolsters when said container bolsters are in the second positions thereof, each of said side transfer plates spanning the distance between the adjacent ends of the associated set of container bolsters and having the upper surface thereof in horizontal alignment with the upper surfaces of the associated container bolsters to facilitate the sliding of a container onto said container bolsters.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,552,325 Dated January 5, 1971

Inventor(s) Samuel H. Enochian

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 13, Claim 1, line 63, after "rails"

insert -- and said center guide rails --.

Column 15, line 46, change "sad" to -- said --.

Signed and sealed this 6th day of April 1971.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents