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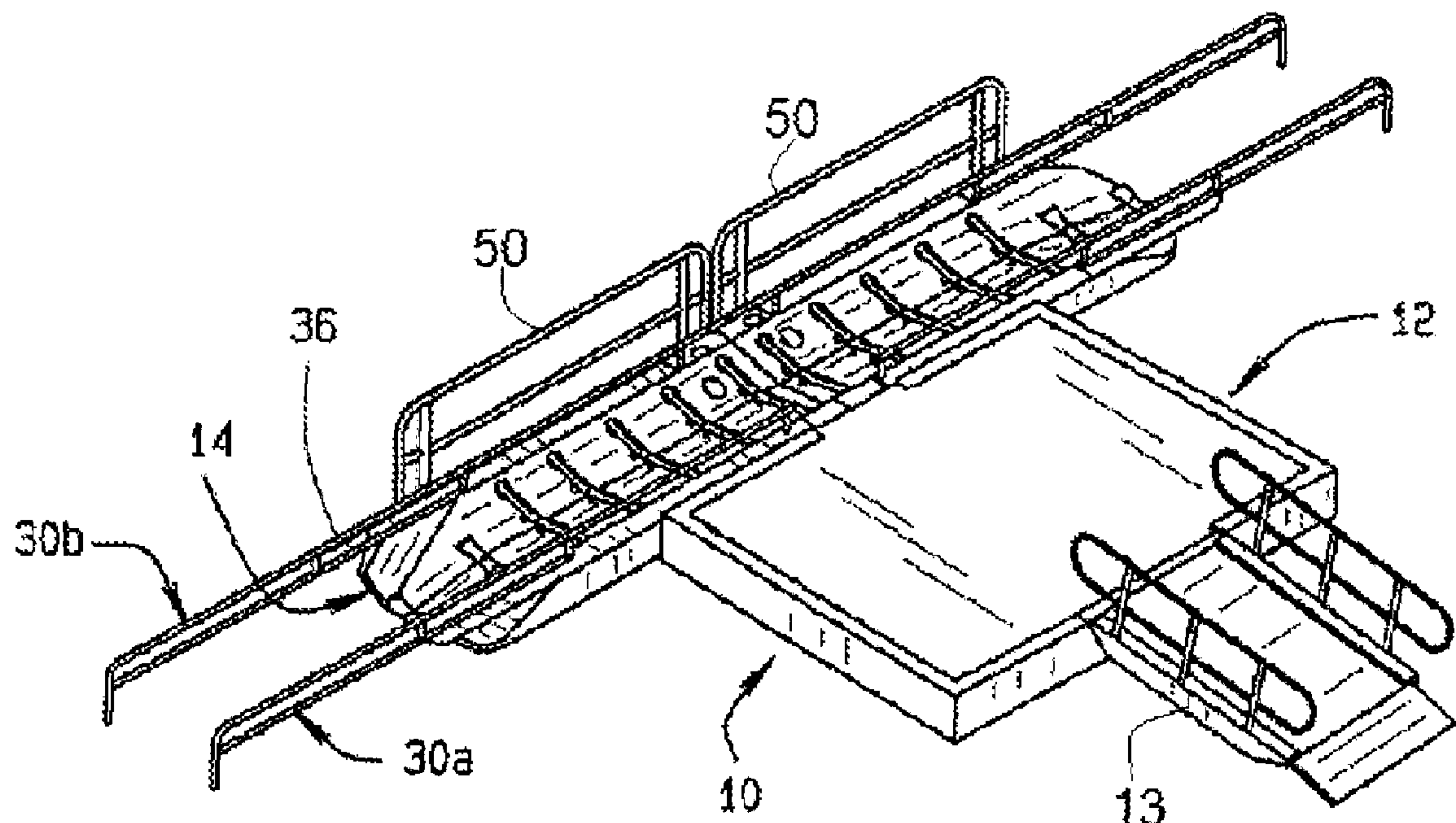
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(57) Abrégé/Abstract:

A boatlift for use with small, manual or paddle or oar powered watercraft (such as canoes and kayaks) is provided with a guide rails on either side of the boat lift, which can be utilized by a boater to propel or urge his/her watercraft onto the boatlift. In addition, that boatlift is provided with an entrance/exit assist member which can be used by boaters with impaired leg function to enter and exit from the watercraft.

ABSTRACT

A boatlift for use with small, manual or paddle or oar powered watercraft (such as canoes and kayaks) is provided with a guide rails on either side of the boat lift, which can be utilized by a boater to propel or urge his/her watercraft onto the boatlift. In addition, that boatlift is provided with an entrance/exit assist member which can be used by boaters with impaired leg function to enter and exit from the watercraft.

SMALL WATERCRAFT BOATLIFT

CROSS-REFERENCE TO RELATED APPLICATION

[0001] The present application is a divisional application of Canadian Patent Application No. 2,678,957 filed on September 10, 2009.

BACKGROUND OF THE INVENTION

[0002] This disclosure relates generally to docks and/or boatlifts for small watercraft, and in particular to such docks and/or lifts for use by manually or paddle powered boats, such as canoes, kayaks, etc.

[0003] Boat lifts for small watercraft, such as personal watercraft (PWC's), kayaks, canoes, etc. typically include cradle for the watercraft which is bounded on at least two sides by decking. The boat lift, in turn, is often part of a docking system, which provides lifts for several watercraft. A popular boat lift is sold by EZ Dock, Inc. under the name EZ Port[®] and EZ Port Max[®]. However, those who have impaired leg function or are wheel-chair bound such boat lifts find it difficult to board and disembark watercraft when docked in such boat lifts. Additionally, boatlifts, such as the EZ Port and EZ Port Max rely on power from a motor to propel the watercraft onto the boat lift. It is difficult to product sufficient energy in manually powered (or rowed) watercraft, such as canoes, kayaks, etc. to propel the canoe, kayak, etc. onto the boat lift. Thus, the boater will need to exit or disembark the boat at the dock, and then maneuver the boat around the dock to the boat lift and pull the boat onto the boat lift.

[0004] It would therefore be desirable to provide a boat lift for small watercraft which would make it easier for those with impaired leg function or otherwise use a wheel chair to board and disembark from small watercraft. It would also be desirable to provide a boat lift in which oar powered or rowed boats (such as canoes, kayaks, etc.) can be driven or propelled onto a boat lift.

BRIEF SUMMARY OF THE INVENTION

[0005] A boatlift for manually powered (i.e., paddle or oar powered) watercraft is provided. The boatlift is a floating boatlift which comprises an elongate cradle, decking

on opposite sides of the cradle, an entrance ramp to the cradle, a first guide rail positioned on one side of the cradle and a second guide rail positioned on a second side of the cradle opposite the first side. The first and second guide rails each comprise an approach portion which extends rearwardly of the boatlift ramp and a boatlift portion extending along the boatlift cradle. Each of the guide rails further comprises at least one grab bar extending generally horizontally along the rail. The at least one grab bar is positioned on the guide rail to be at a height where a boater sitting in a paddle or oar powered watercraft could reach the grab bar. Additionally, the first and second guide rails are spaced apart from each other a distance sufficient to allow a paddle or oar powered boat to pass therebetween, yet allowing a boater to simultaneously grab the grab bars of both the first and second guide rails so that the boater can utilize the grab rails to move the boat between the guide rails. The first guide rail is an inside guide rail and the second guide rail is an outside guide rail. The outside guide rail is longer than the inside guide rail. Specifically, the boat lift portion of the inside guide rail has an end spaced rearwardly of an end of the boatlift, whereas, the outside guide rail has an end which is substantially even with the forward end of the boat lift.

[0006] In an illustrative embodiment, the guide rails each comprise an upper grab bar and a lower grab bar. The lower grab bar extends at least the length of the approach portion of the guide rails, and can extend to the end of the boatlift ramp (i.e., where the ramp and the cradle meet). The upper grab bar extends at least the length of the boatlift portion of the guide rails, and can extend substantially the length of the guide rail.

[0007] The boatlift can further include a barrier rail which is associated with the outside guide rail. The barrier rail comprises a horizontal bar spaced above the top bar of the guide rail, and can be mounted to the boatlift decking or to the outside guide rail. If the barrier rail is mounted to the outside guide rail, then the horizontal bar of the barrier rail is higher than it is if the barrier rail is mounted to the boatlift decking. The barrier rail can be independent of or integral with the guide rail.

[0008] The boatlift can also be provided with an entrance/exit assist member located proximate a forward end of one of the guide rails. The entrance/exit assist member comprises a pair of opposed legs extending upwardly on opposite sides of the boatlift

cradle and a cross-member extending between the legs and over the cradle. The legs are of sufficient height such that a paddle or oar powered watercraft can pass under the cross-member, and whereby the cross-member is at a height to be reachable by a boater sitting in the watercraft. In addition, the dock to which the boatlift is adjacent can include at least one bench. The bench is positioned to be adjacent the assist member and extends generally perpendicularly to the boatlift. The bench extends from the dock and over an edge of the dock such that a portion of the bench extends over the boatlift cradle. Hence, a boater can sit at the far end of the bench and be positioned over the watercraft. The boater can then use the assist member to help lower himself/herself into the watercraft.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0009] FIG. 1 is a perspective view of a boat lift provided with an illustrative guide rail system;

[0010] FIG. 2 is a schematic drawing of guide rails of the guide rail system with a plan view of a boat lift and dock;

[0011] FIG. 3 is a perspective view of one illustrative embodiment of the guide rail system;

[0012] FIGS. 4a,b are perspective views of the guide rail system provided with barrier rails, the two figures showing the barrier rail mounted in two different positions relative to the guide rails; and

[0013] FIGS 5 and 6 are front and side perspective views of the guide rail system provided with assist members to facilitate entry into and exit from small watercraft and benches on the dock to facilitate use of the assist members.

[0014] Corresponding reference numerals will be used throughout the several figures of the drawings.

DETAILED DESCRIPTION OF THE INVENTION

[0015] The following detailed description illustrates the invention by way of example and not by way of limitation. This description will clearly enable one skilled in the art to make and use the claimed invention, and describes several embodiments, adaptations, variations, alternatives and uses of the claimed invention, including what we presently

believe is the best mode of carrying out the claimed invention. Additionally, it is to be understood that the claimed invention is not limited in its application to the details of construction and the arrangements of components set forth in the following description or illustrated in the drawings. The claimed invention is capable of other embodiments and of being practiced or being carried out in various ways. Also, it is to be understood that the phraseology and terminology used herein is for the purpose of description and should not be regarded as limiting.

[0016] A dock system 10 for small watercraft includes a dock 12 and a boat lift 14. The dock 12 can be a floating dock, such as sold by EZ Dock, and which is comprised of a plurality of dock sections 12a (FIG. 2) which are connected together to form a dock of a desired shape and size. Preferably, the dock system 10 is provided with a gang plank or ramp 13 to facilitate entry onto and exit from the dock 12. A transition member 15 can be provided between the gang plank 13 and the dock 12. Such a dock can be made, for example, in accordance with US Pat. Nos. 5281055 and 7243608.

[0017] The boat lift 14 is secured to the dock 12, in accordance with the docking system from which the dock 10 is made. With reference to FIG. 3, the boat lift 14 comprises a body 16 having a boat cradle 18 which, as shown, extends the length of the boat lift. A deck 19 extends along the outer edge of the cradle 18 on either side of the cradle 18. The boat lift is preferably a boat lift, such as described in US Pub. No. 20090044740, or which is sold by EZ Dock, Inc. under the name EZ Port Max. An entrance ramp 20 is at one end of the cradle. The cradle 18 has a pair of opposed, inwardly sloping walls 22 with rollers 24 positioned along each wall. The rollers can comprise elongate cylinders, as seen in FIG. 3, which extend transversely along the sloping walls 22 of the boat lift cradle 18. These rollers 24 have inner ends that are proximate the center of the cradle, but which are spaced from each other a sufficient distance to enable the rollers to rotate about an axis. Alternatively, the rollers 24 can be football or torpedo-shaped, such as described in US Pub. No. 20090044739.

[0018] The boat lift 14 is provided with guide rails 30a,b on either side of the cradle 18. The guide rails 30a,b are substantially the same. However, as will become apparent, the guide rail 30b is slightly longer than the guide rail 30a. The guide rail 30b can thus

be considered an “outside” guide rail which is positioned on the far side of the boat lift 14 from the dock 12; and the guide rail 30a can be considered an “inside” guide rail which is on the dock side of the boat lift 14. Although the guide rails 30a,b are shown mounted on the right and left sides of the boatlift, respectively (with reference to FIG. 3), the guide rails 30a,b could alternatively be mounted on the left and right sides, respectively of the boatlift. The respective placement of the guide rails 30a,b depends on which way the boatlift is “facing” or which side of the boatlift is adjacent the dock 12.

[0019] The guide rails 30a,b are longer than the boat lift 14, and include an approach portion 32 in front of the boat lift ramp 20, and a boat lift section 34 which extends along the boat lift 14. As seen, the approach portion 32 of the guide rails 30a,b extend rearwardly of the boat lift ramp 20, such that a back end of the guide rails 30a,b is spaced from the back end of the ramp 20. Hence, the approach portions 32 of the two guide rails 30a,b define an approach lane which is at least as wide as the cradle 18 of the boat lift, into which a boater can direct a manually powered watercraft. In the outside guide rail 30b, the boat lift section 34 of the guide rail extends substantially to the end of the boat lift. In inside guide rail 30a, on the other hand, the boat lift section 34 ends short of the end of the boat lift. As seen in Fig. 1, when two boat lifts are connected end-to-end, the shorter inside guide rails provide an pass-through area from the dock 12 through which boaters can pass to access to watercraft.

[0020] The guide rails each include a top grab bar 36 which extends substantially the full length of the guide rail 30 and a lower grab bar 38 which extends the length of the approach section 32 of the guide rails. The lower grab bar 38 is essentially level with the boat lift deck 19. The guide rail additionally can include a front pole 40 at the front end of the guide rail 30 to which both the upper and lower grab bars are connected. Alternatively, as seen in FIG. 2, the front end of the guide rail can simply be closed by a section of the bar. In this instance, the grab bars 36 and 38 can be formed from a single long section of tubing which is bent to form the two grab bars. Connector posts 42 extend between the upper and lower grab bars 36,38, and an end post 44 is positioned near the end of the guide rail. On the inside guide rail 30a, the top grab bar 36 ends at the end post 44, whereas, on the outside guide rail 30b, the top grab bar extends beyond the

end post 44. Lastly, the guide rails 30a,b include a mounting plate 46 which extends between the two connector posts 42, and a mounting plate 48 at the bottom of the post 44 to facilitate mounting of the guide rail to the boat lift 14. The mounting plates 46 and 48 are generally perpendicular to the posts 42 and 44, such that when the mounting plates are secured to the deck portion 19 of the boatlift 14, the guide rails 30a,b will be generally perpendicular to the boatlift (and will be generally vertical).

[0021] As shown in FIGS. 1 and 4a,b, a barrier rail 50 can be provided. The barrier rail 50 includes a pair of vertically spaced apart, horizontally extending bars 52 which are connected to, at their opposite ends, by vertical posts 54. The barrier rail 50 extends the length of the boatlift cradle 18 (or generally from the end of the boatlift ramp 20 to the opposite end of the boatlift 14. As shown in FIG. 4a, the barrier rail 50 can be mounted directly to the boat lift, in which case, the barrier rail lower bar is generally level with the upper grab bar of the guide rail approach portion. In this instance, this lower bar of the barrier rail could operate as a continuation of the lower grab bar. Alternatively, as shown in FIG. 4b, the barrier rail can be mounted to the guide rail 30, such that the bottom of the vertical posts 54 of the barrier rail are approximately level with the top bar of the guide rail. Here, the barrier rail is described as being separate from the guide rail. However, the barrier rail could be formed with, or as a part of, the guide rail. As seen, the barrier rail is associated with the outside guiderail 30b.

[0022] As shown in FIG. 1, two boat lifts can be connected in tandem to form a single boat lift that is open at both ends. In this instance, one end of the boat lift serves as an entrance, and the opposite end serves as an exit. Alternatively, if the boatlift does not include a ramp at its forward end, as seen in FIG. 5, the boatlift can be provided with a stop 60 (FIG. 5) to prevent the watercraft from being propelled forwardly off the end of the boatlift. The stop 60 can simply be a bar which extends across the forward end of the boatlift between the inside and outside guide rails 30a,b, as seen in FIG. 5. Alternatively, the stop 60 can comprise a bow stop, as disclosed in the above noted US Pub. No. 20090044740.

[0023] When the guide rails 30 are mounted to the boat lift 14, the lower grab bars 38 of the approach portion 32 are approximately at the level of the canoe, kayak, etc. so that

they can easily be grasped by a boater sitting in the canoe, kayak, etc., when the boater is in the approach lane defined by the guide rails. Further, the spacing between the two guide rails will allow the boat to pass between the rails 30, while allowing the boater to grab both rails at the same time. Hence, by grabbing the lower grab bars 38 of the approach portion of the guide rails 30, the boater can propel his/her boat forward with sufficient force to drive the watercraft onto the on-ramp of the boatlift. By grabbing a forward section of the grab bars 36, 38, the boater can continue to propel his/her boat along the boatlift until the watercraft (i.e., canoe, kayak, etc.) is fully on the boatlift. As can be appreciated, as the watercraft is propelled onto the boatlift, the level of the watercraft, and hence, the boater, will be raised. Hence, as the boater moves the watercraft along the boatlift, the boater can change from initially using the lower grab bars 38 to using the upper grab bars 36 of the guide rails 30. When a boater desires to launch the watercraft, the boater need only get into the watercraft, and using the guide rails 30a,b, propels the boat off the boatlift. In the embodiment of FIG. 1(which has ramps at both ends of the boatlift) the boater can go forward, whereas in the embodiment of FIG. 5 (which has a stop extending across the forward end of the boatlift), the boater will need to go backwards to exit the boat lift. In either case, the rollers facilitate moving the watercraft along the boat lift, such that moving the watercraft along the boatlift is not unduly strenuous.

[0024] The embodiment of FIGS. 1-4b works well for able bodied boaters. However, it does not facilitate boaters with impaired leg function, are in a wheel chair, or otherwise have difficulty in getting into and out of small watercraft. In FIGS. 5 and 6, the boatlift is provided with an entrance/exit assist member 70 comprised of vertical legs 72 and a cross-member 74 extending between the legs 72. The legs 72 extend upwardly from the boatlift on opposite sides of the boatlift cradle 18, and the cross-member 74 extends over the cradle 18. The assist member 70 is positioned at the end of the inside guide rail 30a. Thus, in FIGS. 5 and 6, where two boatlifts are interconnected, and the inside guide rails form a pass through area, the assist members 70 are positioned at this pass-through area. As seen, a boat can pass under the assist members 70. The assist members 70 are sized

such that the cross-member 74 is at a height which will allow for a boater sitting on a bench in the boat to reach up and grab the cross-member 74.

[0025] The dock is further provided with a pair of benches 76a,b positioned adjacent the assist members 70. The benches 76a,b each extend across a portion of the dock 12 so that the benches can be used by people on the dock 12. In addition, the benches 76a,b extend past the edge of the dock and over the decking of the boatlift, such that the edge of the benches are over the gunwales of the boat. In FIGS. 5 and 6, the benches 76a,b are of different heights, with the bench 76b being higher than the bench 76a. This allows for the benches to accommodate people of different abilities. For example, one of the benches may be easier for someone in a wheelchair to use, while the other bench may be easier for someone who walks, but otherwise needs assistance in getting into and out of the watercraft.

[0026] To use the entry/exit assist, the boat is positioned at the pass-through between the inside guide rails 30a with the boat seats generally beneath the assist members 70. With the boat in position, a boater can seat himself/herself on one of the benches 76a,b and slide over to the edge of the bench. By holding on to the cross-member 74, the boater can lower himself/herself from the bench 76a,b to the boat seat.

[0027] As various changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense. For example, although the inside guide rail 30a is described to be mounted or secured to the boatlift, the inside guide rail 30a could be secured to the edge of the dock 12. Although the guide rails include upper and lower grab bars, the guide rails could each be provided with a single grab bar. In this case, the single grab bar would preferably be contoured, such that the section of the grab bar in the approach portion of the guide rail is below the section of the grab bar in the boatlift portion of the guide rail. These examples are merely illustrative.

CLAIMS:

1. A dock system comprising:

a boatlift body, the boatlift body comprising an elongate watercraft-receiving cradle, decking on opposite sides of said watercraft-receiving cradle, and an entrance ramp to said cradle; and

an entrance/exit assist member said entrance/exit assist member comprising a first leg extending upwardly from said decking on one side of said watercraft-receiving cradle, a second leg extending upwardly from said decking on a side of said watercraft-receiving cradle opposite said first leg, and a cross-member extending between said legs and over said cradle; said legs being of sufficient height such that a paddle or oar powered watercraft can pass under said cross-member, and whereby said cross-member is at a height to be reachable by a boater sitting in said watercraft; and

a dock; said boatlift being secured to said dock; said dock including at least one bench; said bench extending generally perpendicularly to said boatlift; said bench extending from said dock and over an edge of said dock such that a portion of said bench extends over said watercraft-receiving cradle.

2. The dock system of claim 1 wherein said entrance/exist assist member is a first entrance/exist assist member; said dock system further including a second entrance/exist assist member spaced forwardly from said first entrance/exist assist member; said second entrance/exist assist member comprising a first leg extending upwardly from said decking on one side of said watercraft-receiving cradle, a second leg extending upwardly from said decking on a side of said watercraft-receiving cradle opposite said first leg, and a cross-member extending between said legs and over said watercraft-receiving cradle; said legs being of sufficient height such that a paddle or oar powered watercraft can pass under said cross-member, and whereby said cross-member is at a height to be reachable by a boater sitting in said watercraft.

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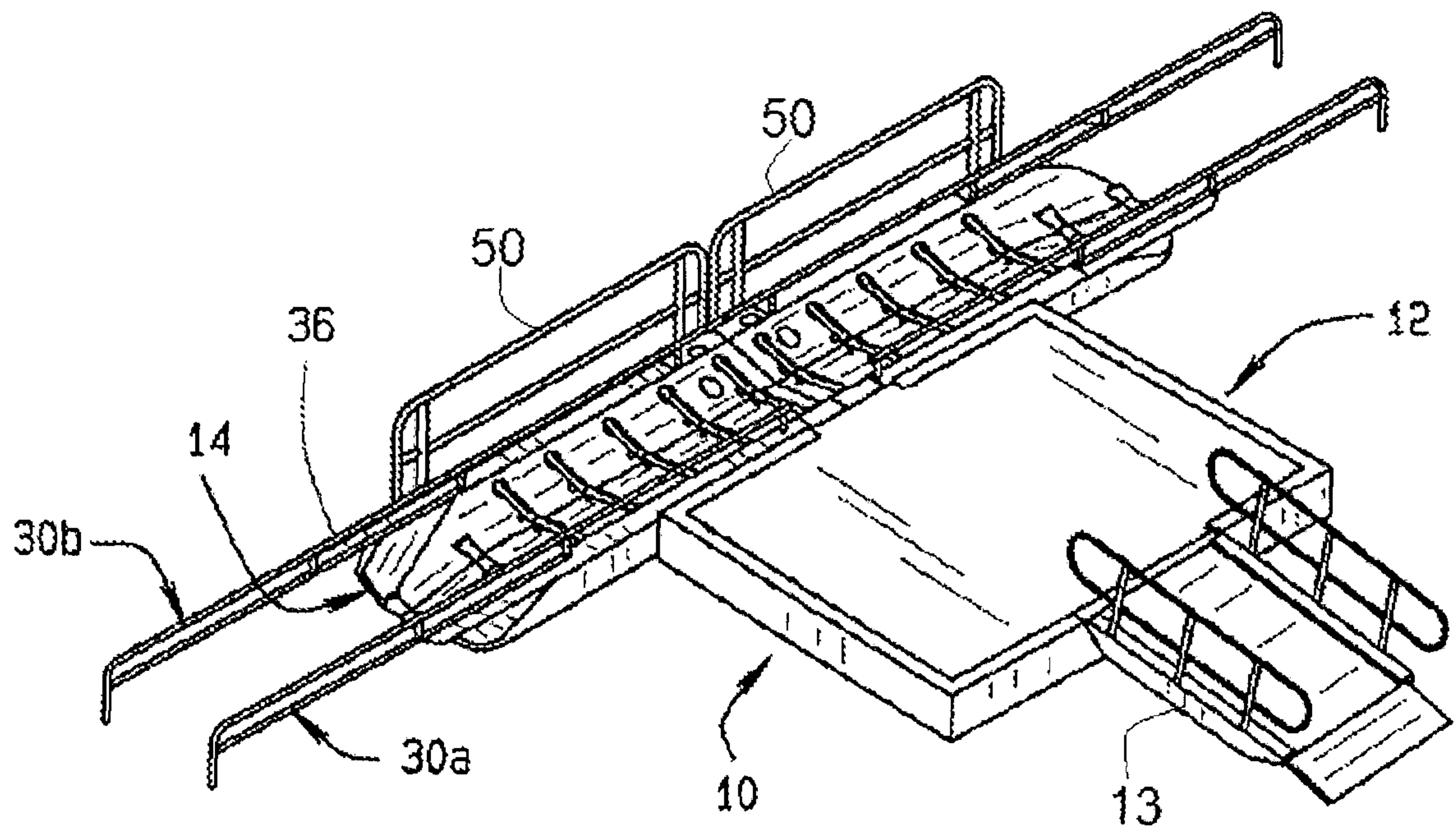


FIG. 1

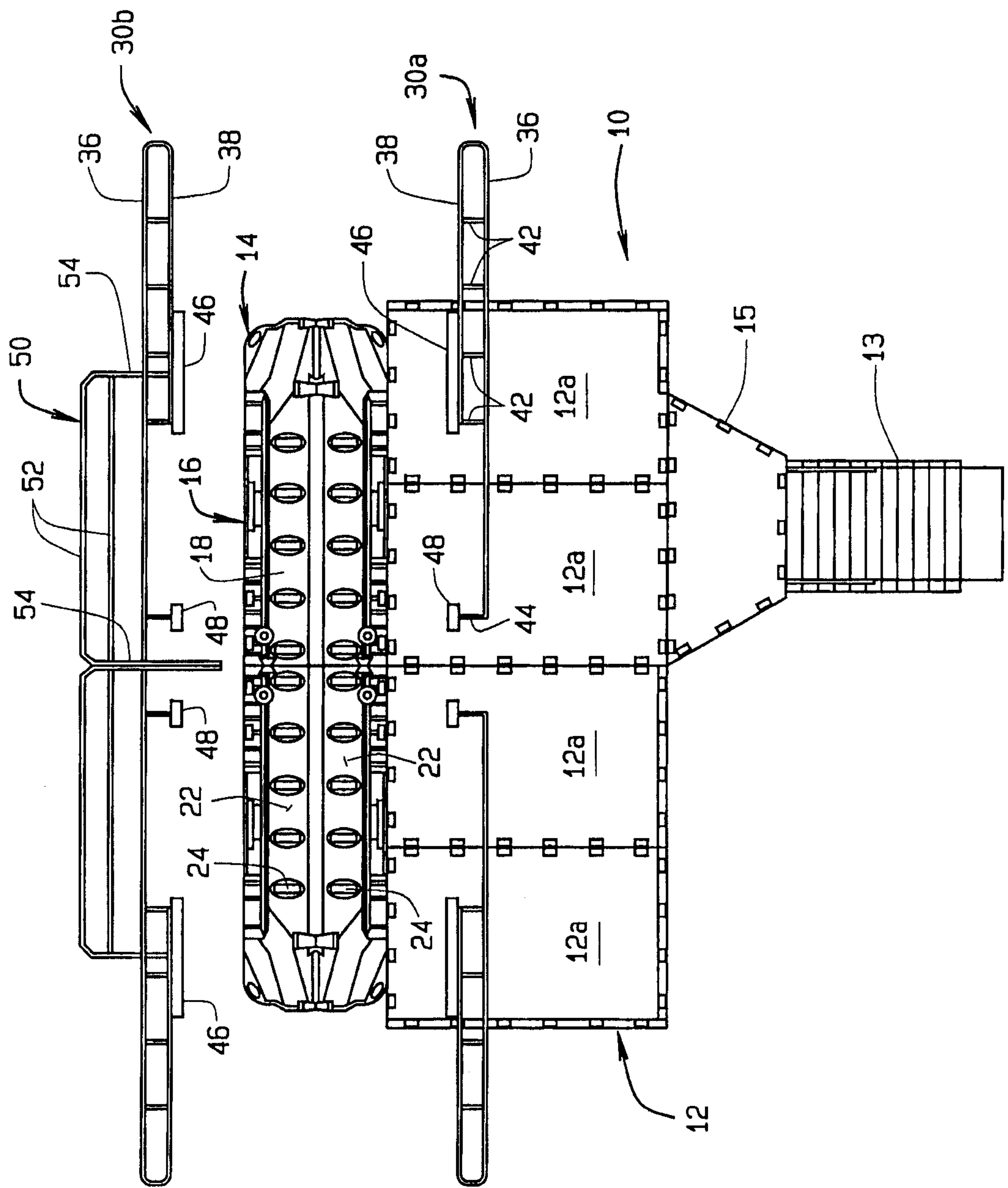
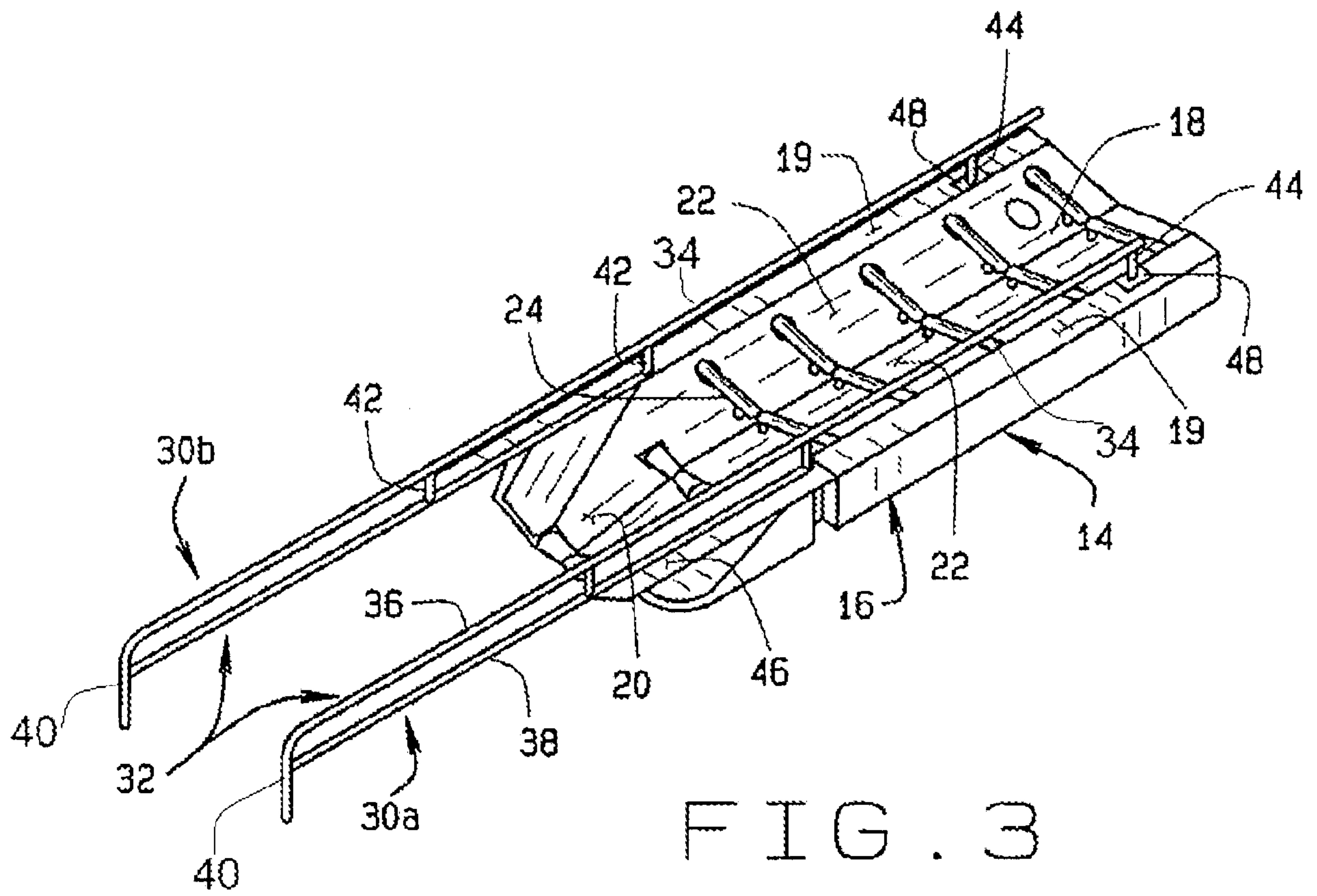


FIG. 2



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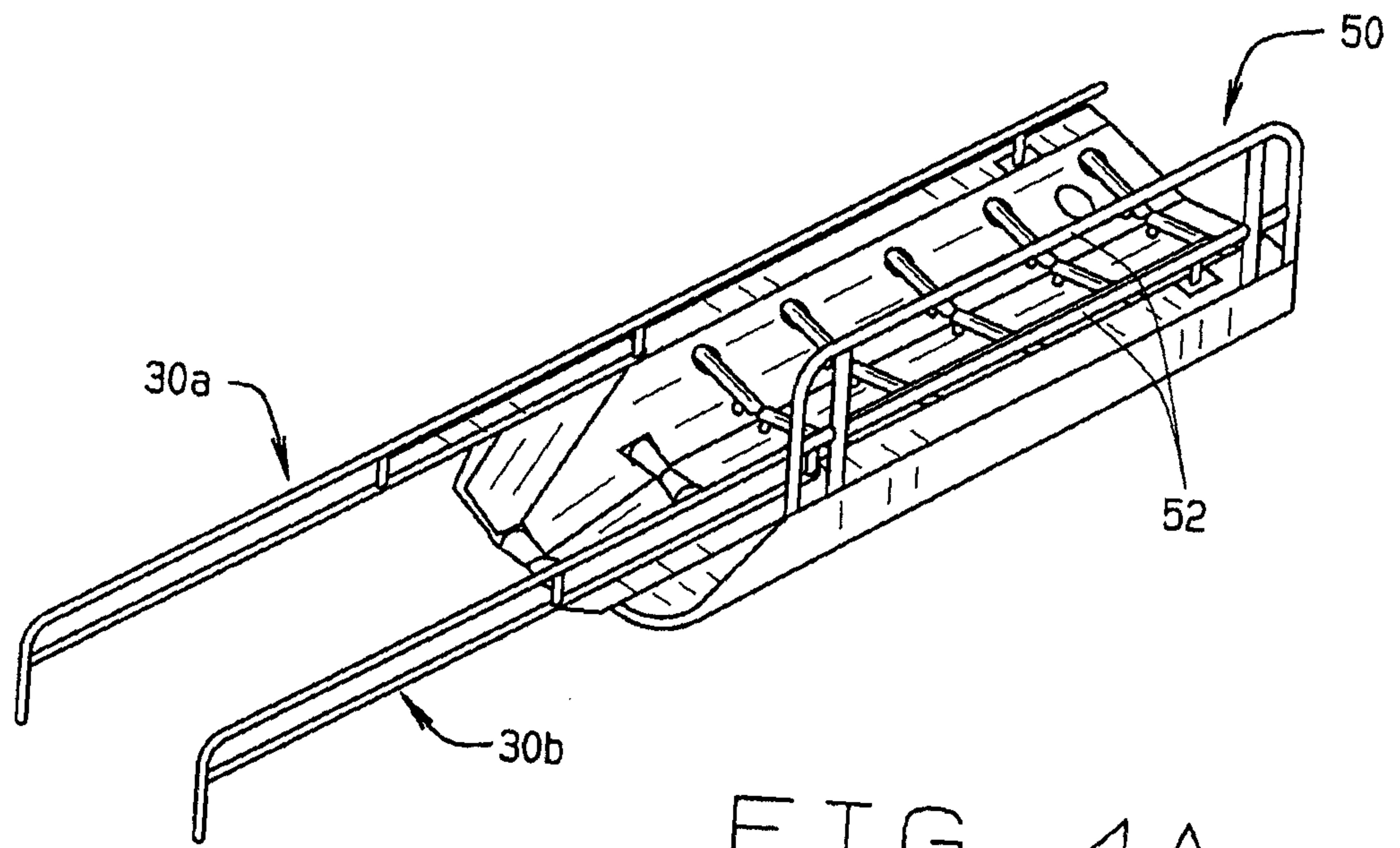


FIG. 4A

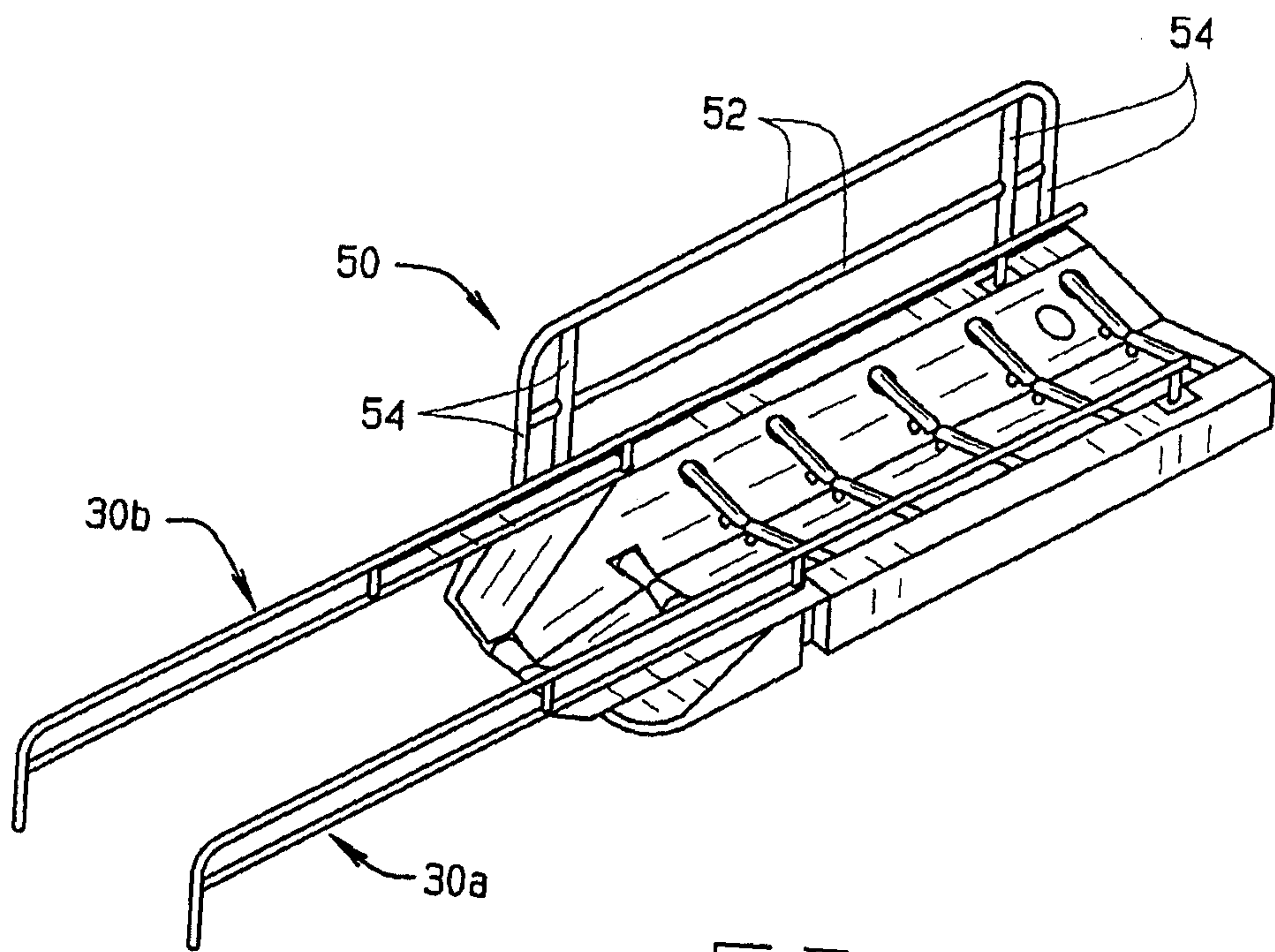


FIG. 4B

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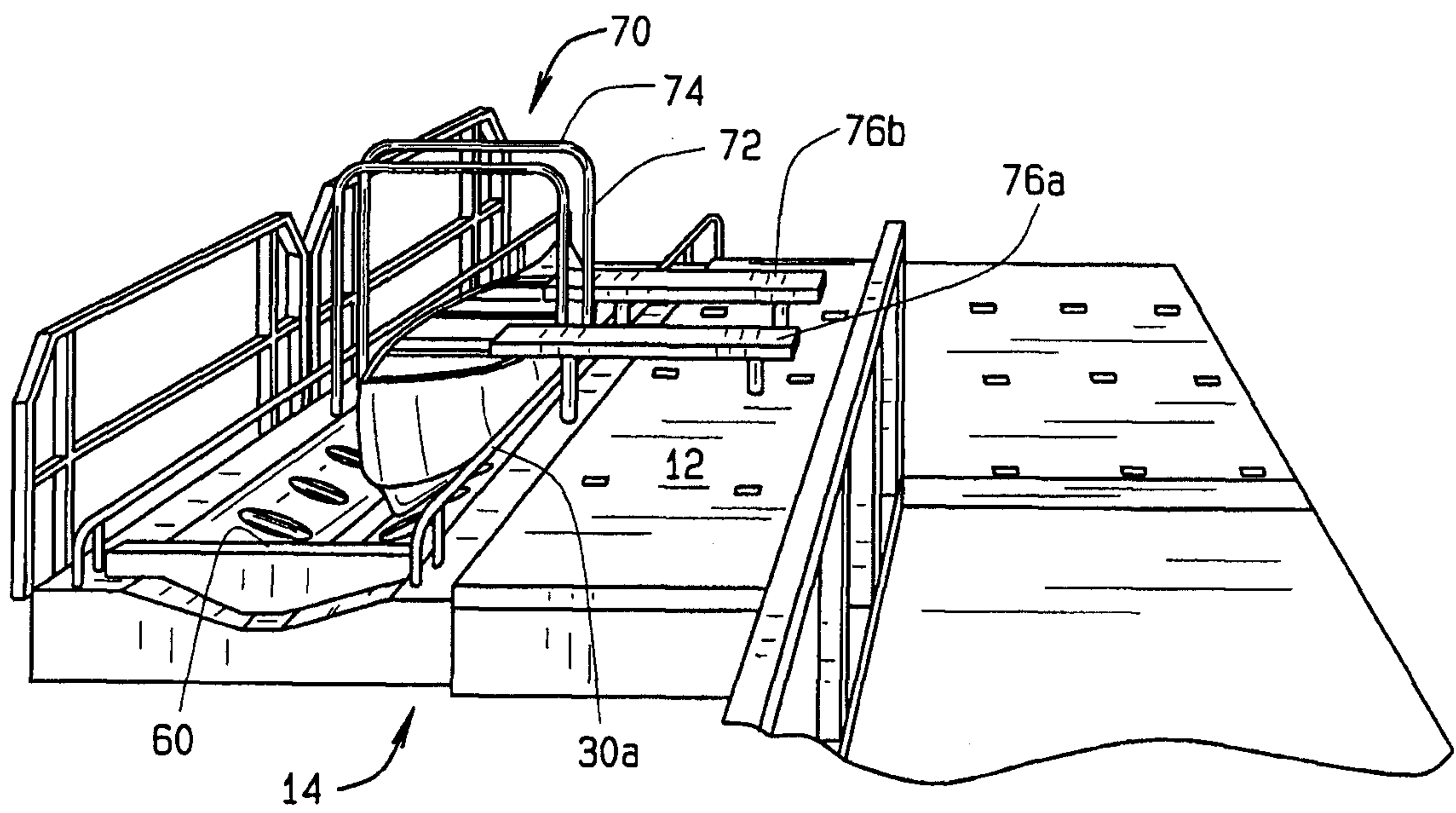


FIG. 5

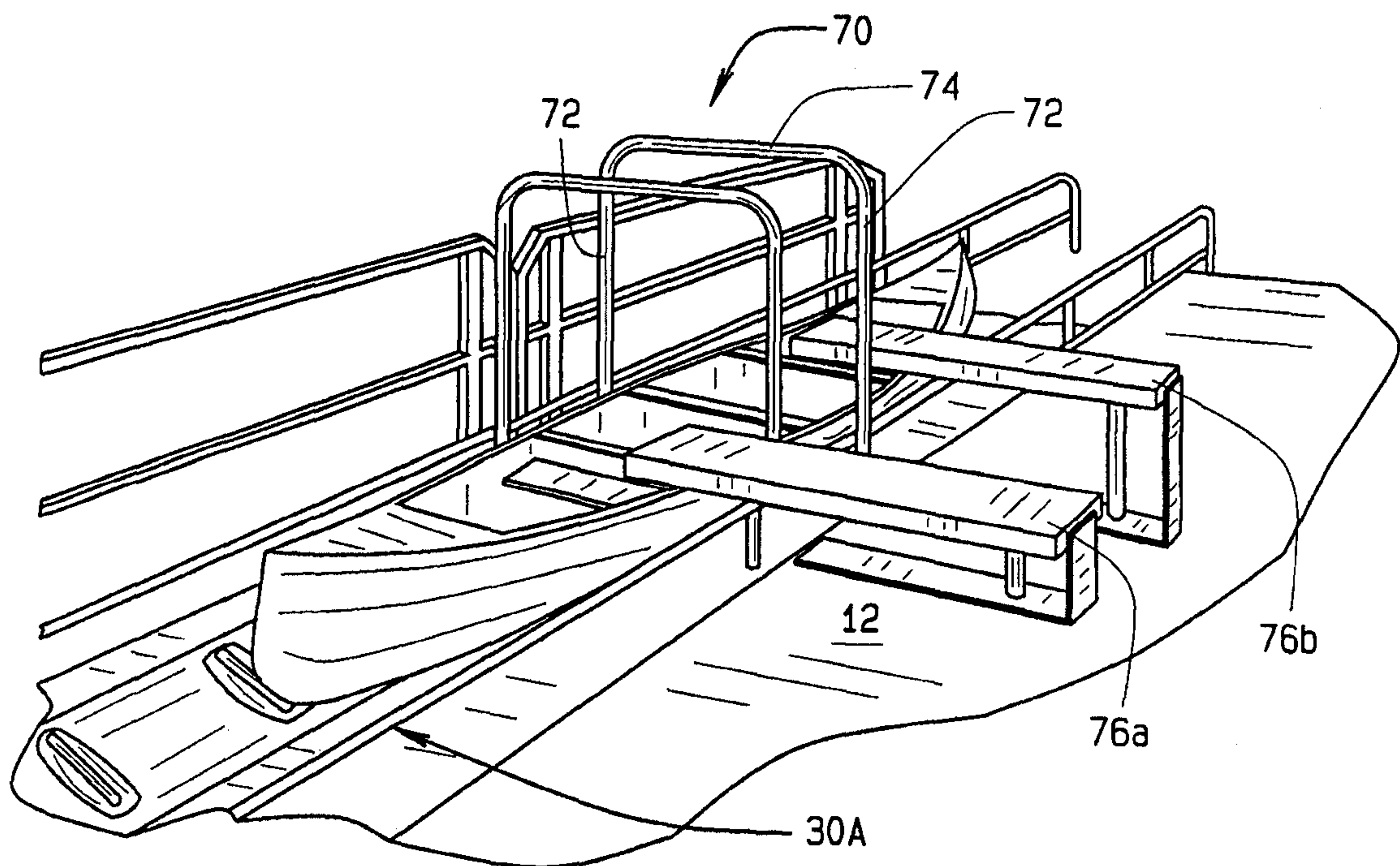


FIG. 6

