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(54) **WALK-ON AFT DECK AND EXTENDABLE SWIM PLATFORM SYSTEM AND METHOD**

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Publication Classification

(51) **Int. Cl.**

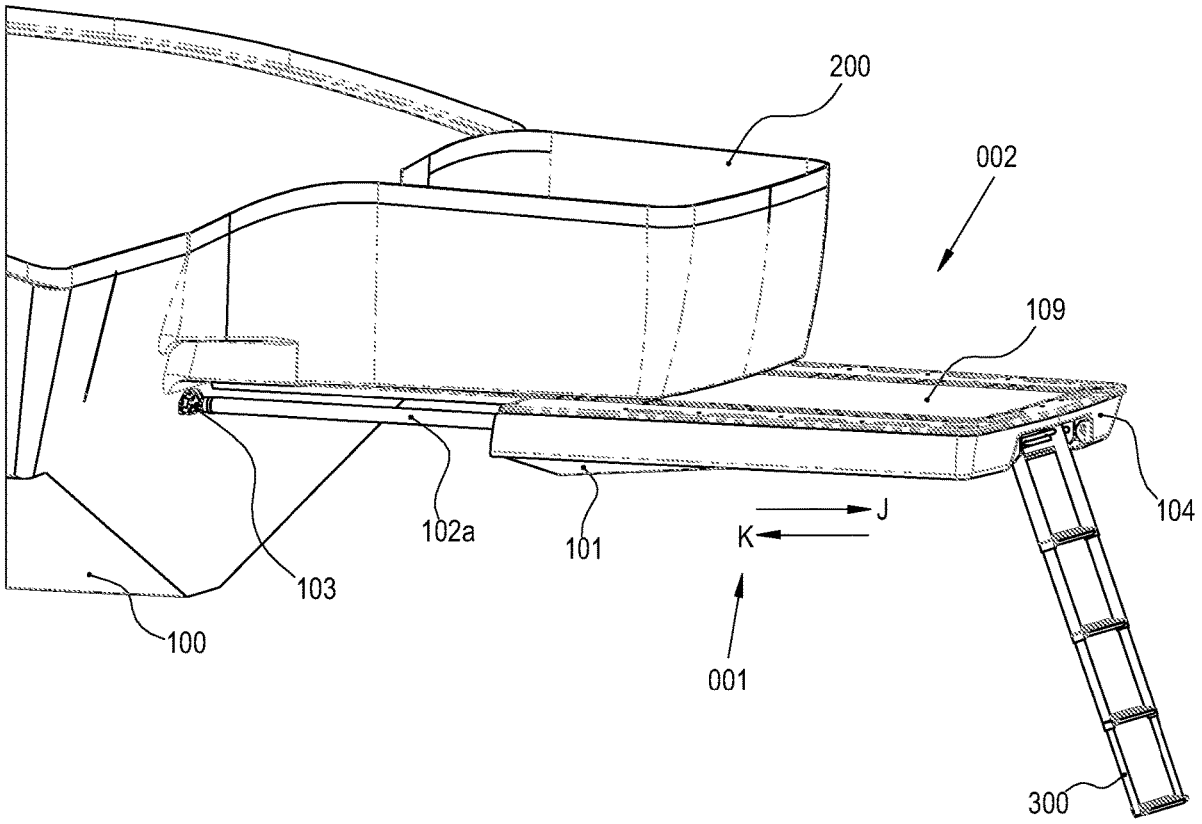
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B63B 29/20	(2006.01)

(52) **U.S. Cl.**

CPC ***B63B 3/48*** (2013.01); *B63B 2003/485* (2013.01); ***B63B 29/20*** (2013.01)

(57) **ABSTRACT**

A system, apparatus and method for providing a walk-on aft deck for a boat, and for providing an extendable swim platform. The walk-on aft deck includes an extended support platform, that may include gunwales, extending from the boat transom between engines of the boat, and extends beyond an aftermost surface of the engines in order to protect the engines from impact. The extendable swim platform extends afterward from the extended support platform, is actuated and retractable, does not act as a running surface when the boat moves forward, but acts as a planing surface when the boat moves in reverse allowing high reverse speeds. The extendable swim platform includes angled anti-slap surfaces underneath. The invention allows users to fish or walk afterward between and beyond the engines; allows greater reverse speeds; and allows users to enter and exit the after swim platform well away from the engine propellers.



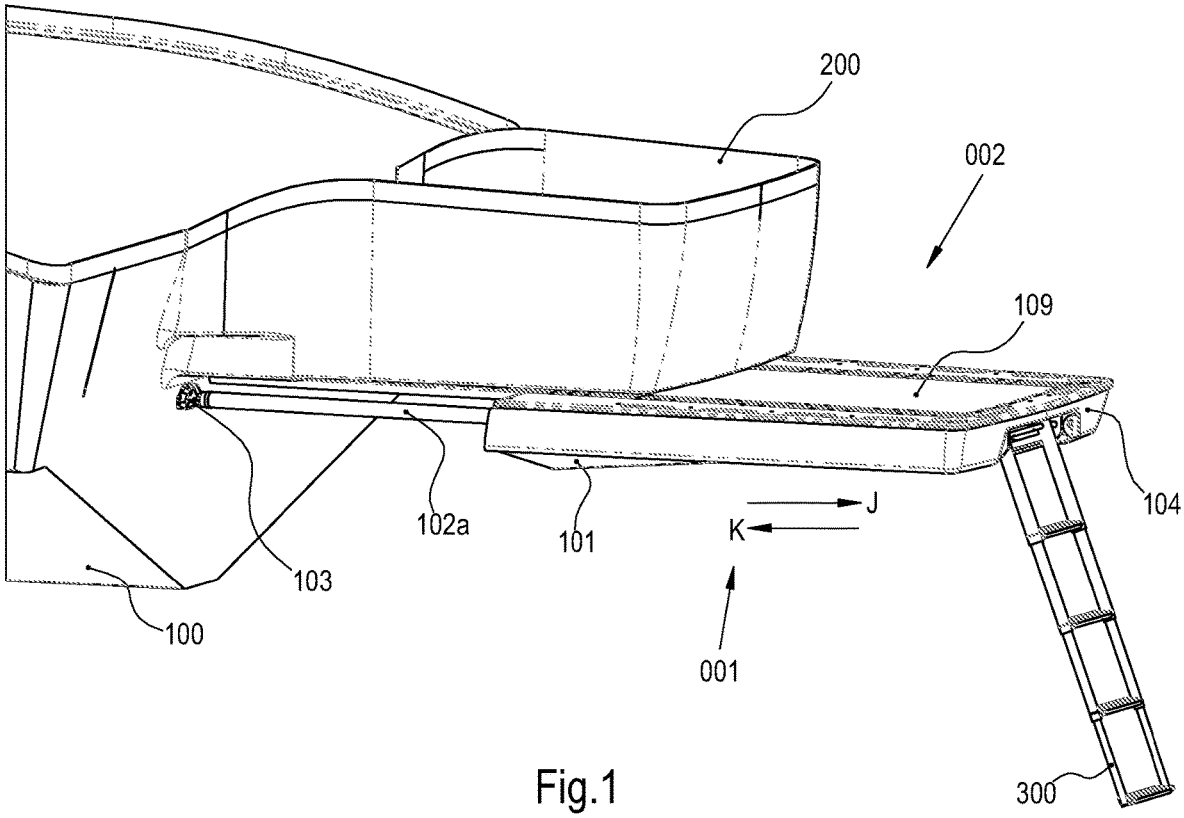


Fig.1

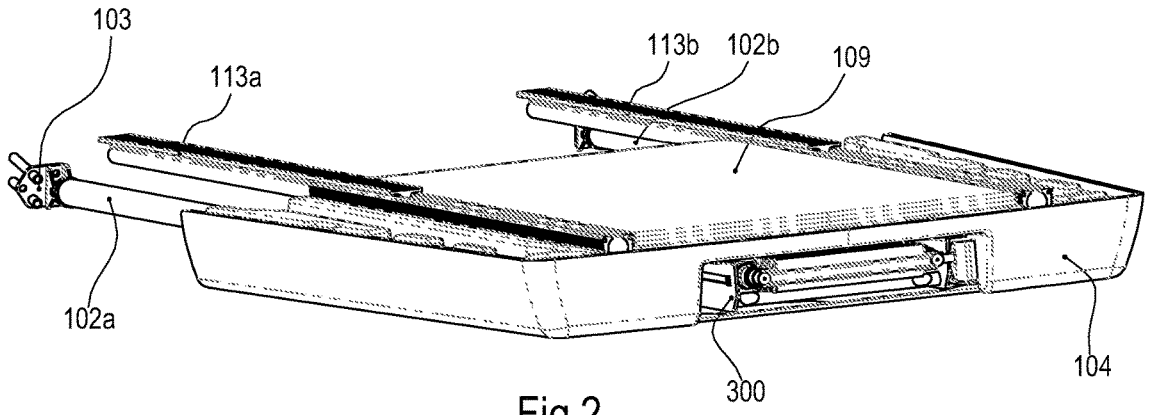

103
113a
113b
102b
109
102a
300
104

Fig.2

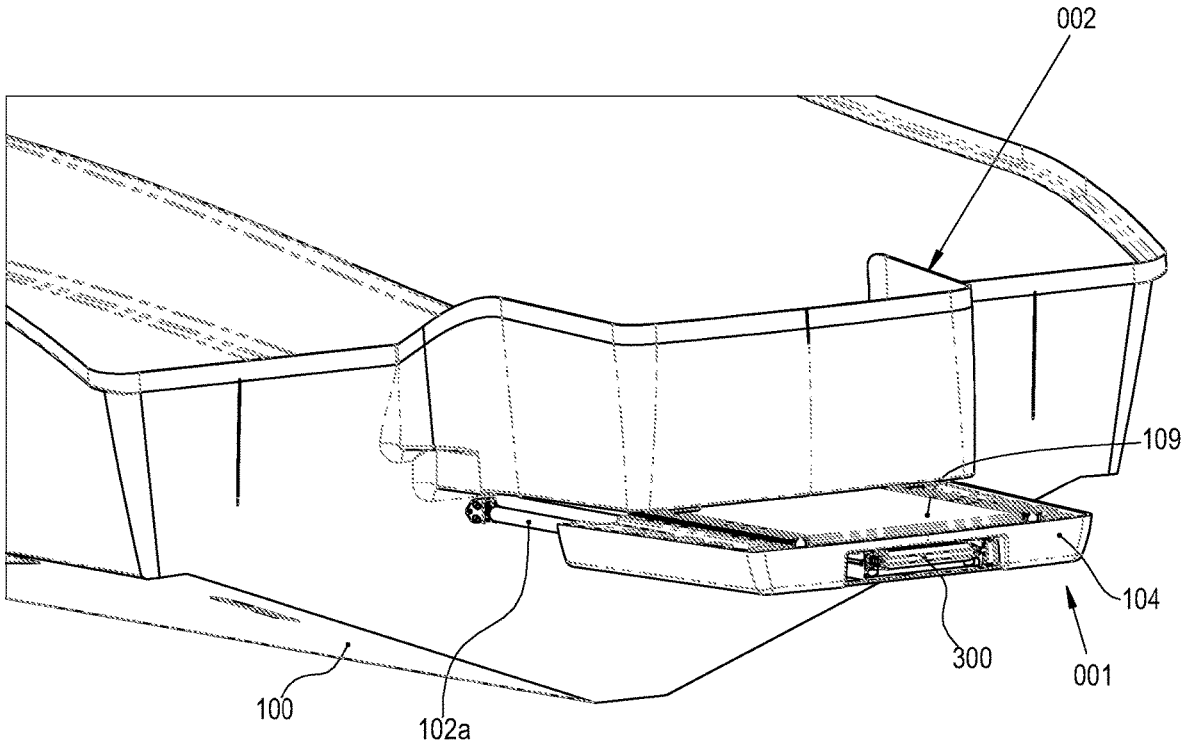

002
109
104
300
001
100
102a

Fig.3

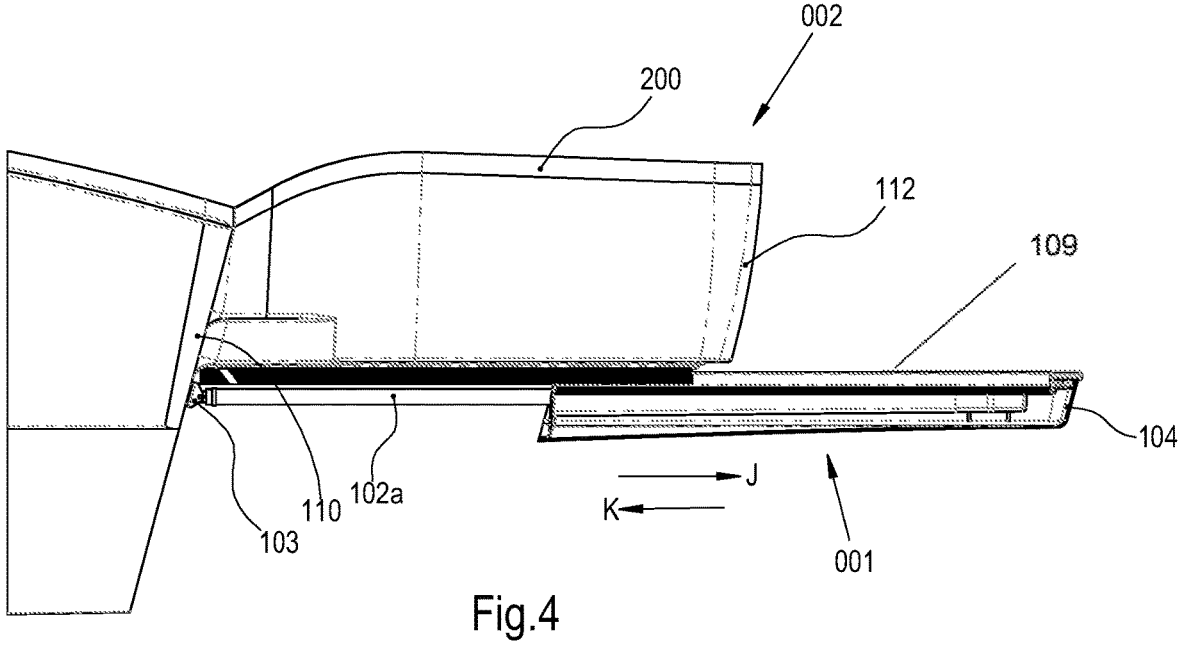

002
200
112
109
104
J
K
110
102a
103
001

Fig.4

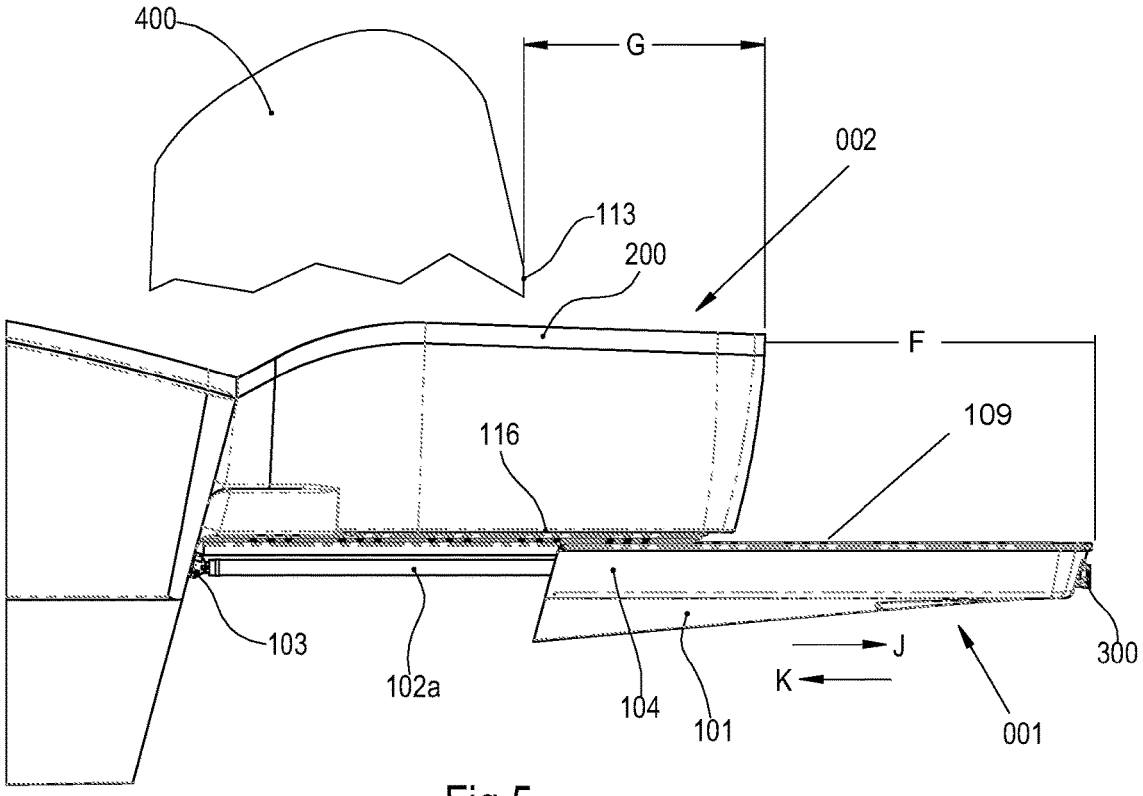

400
G
002
113
200
F
109
116
103
102a
104
101
J
K
300
001

Fig.5

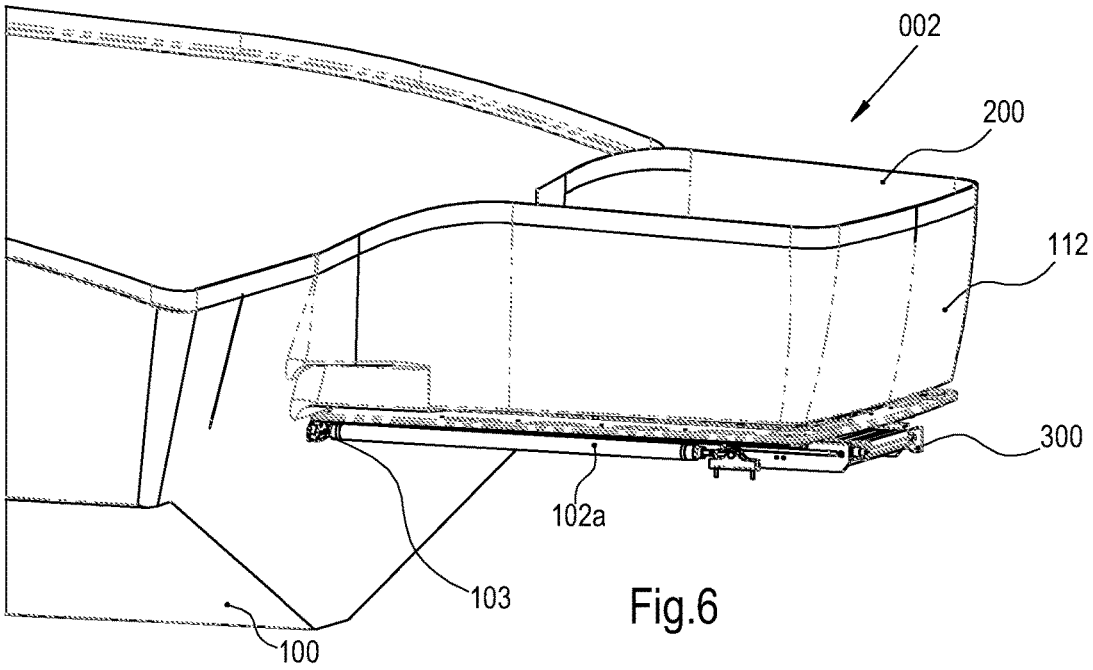


Fig.6

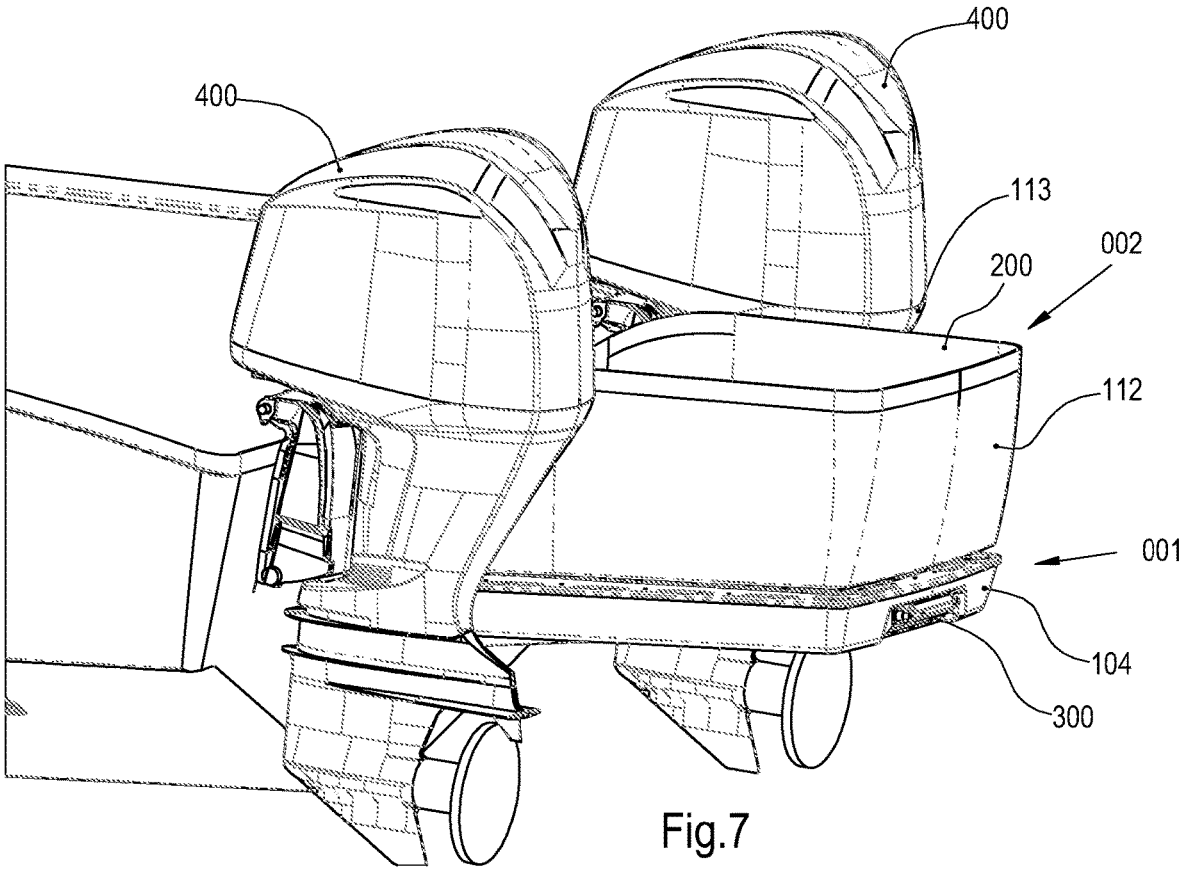


Fig.7

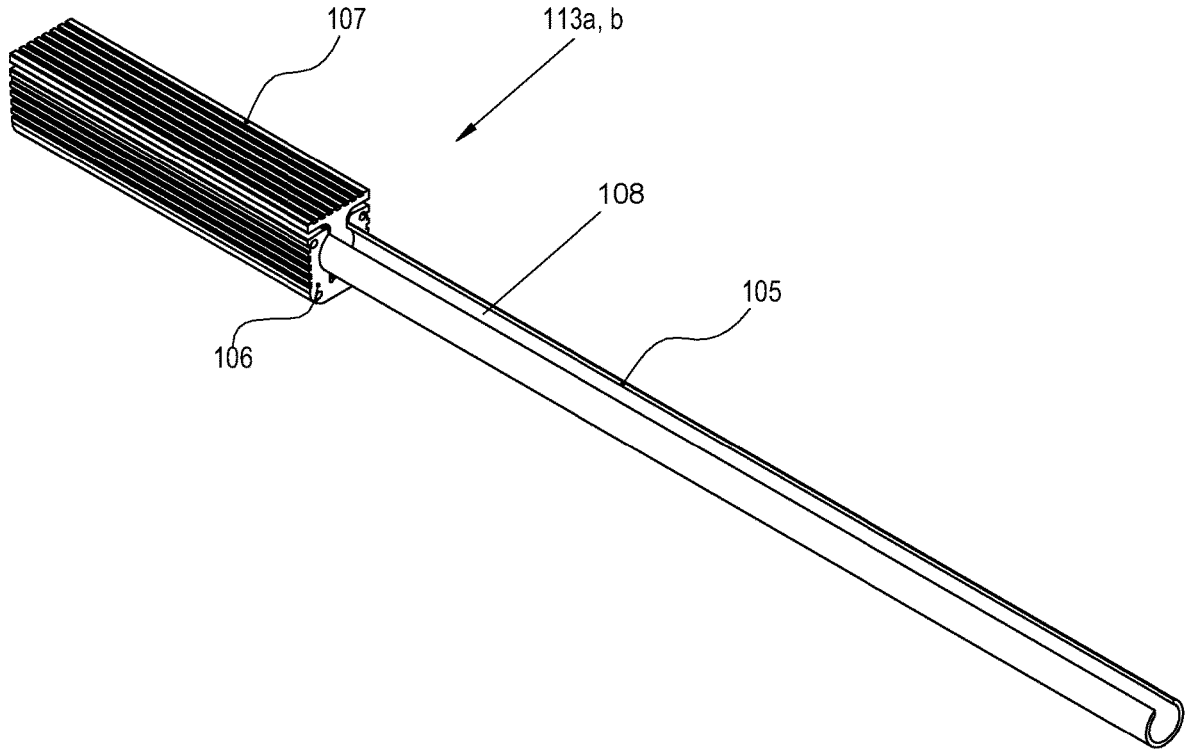


Fig.8

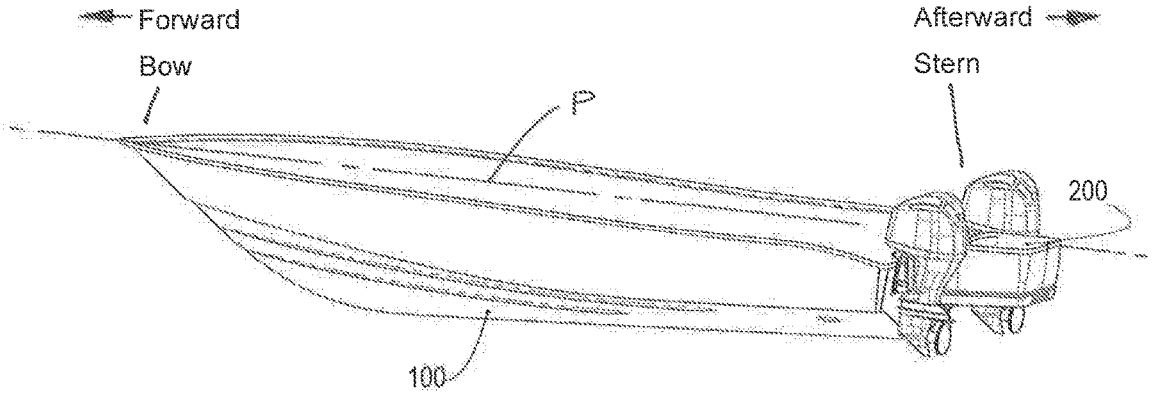


Fig.9

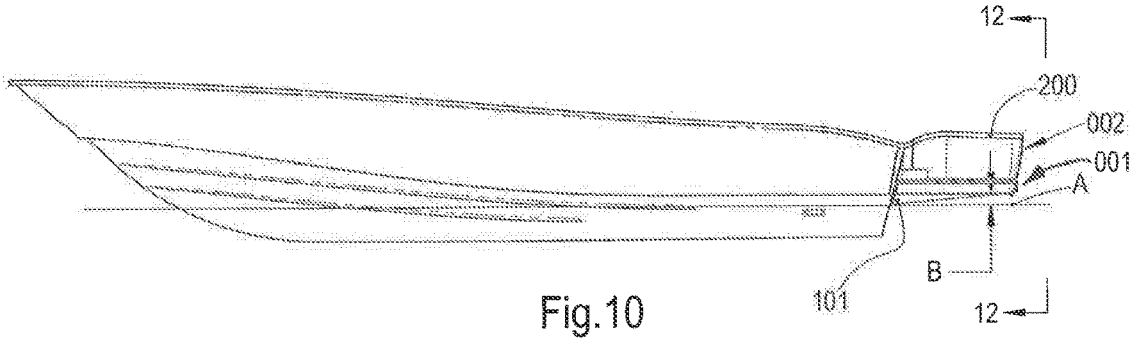


Fig.10

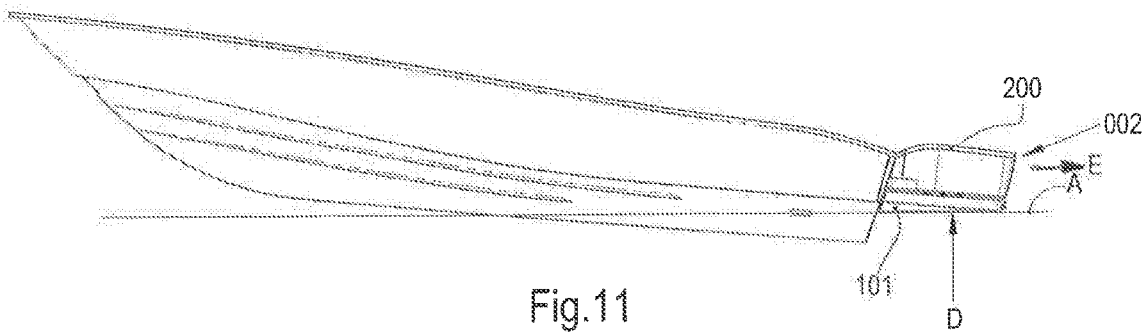


Fig.11

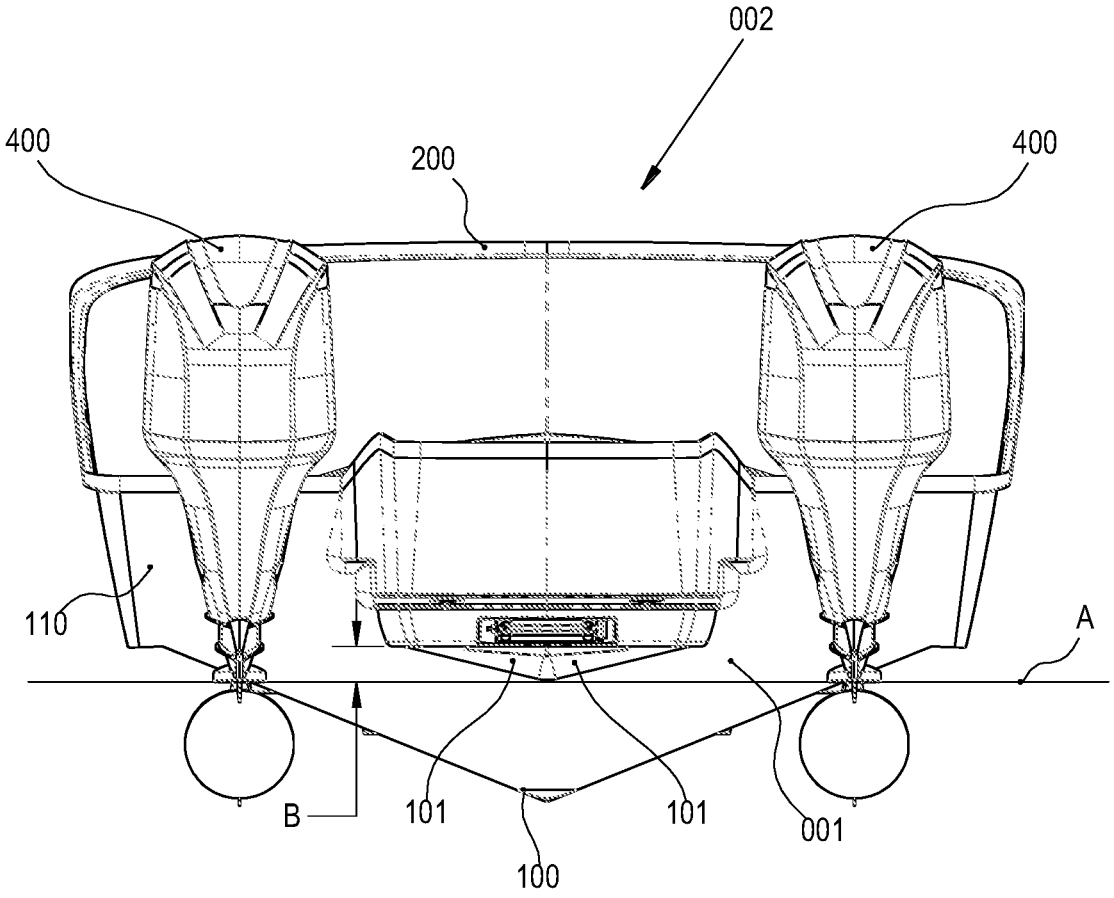


Fig.12

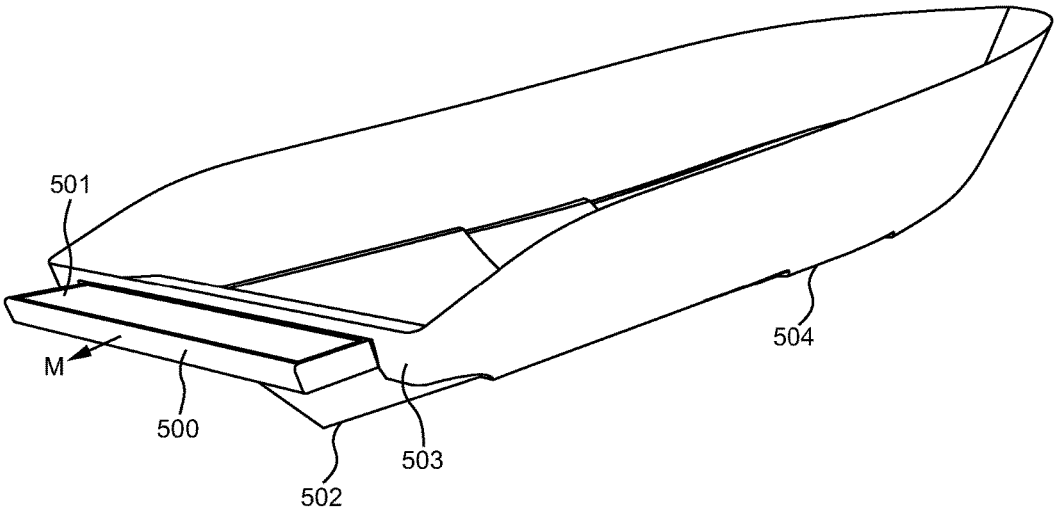


Fig. 13

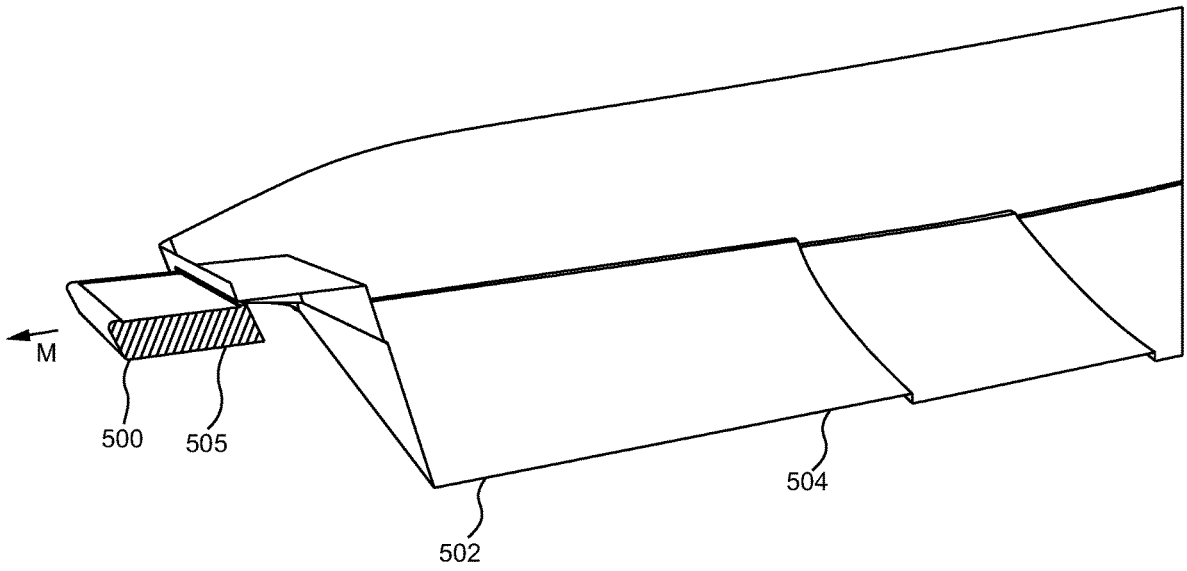


Fig. 14

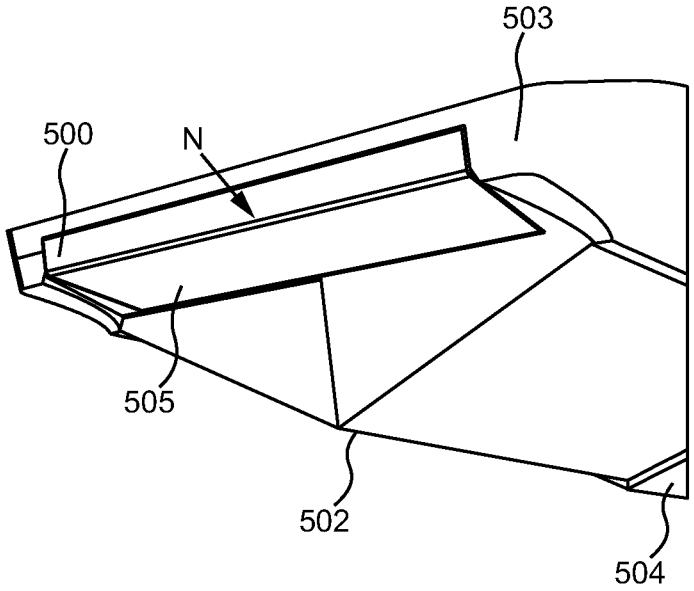


Fig. 15

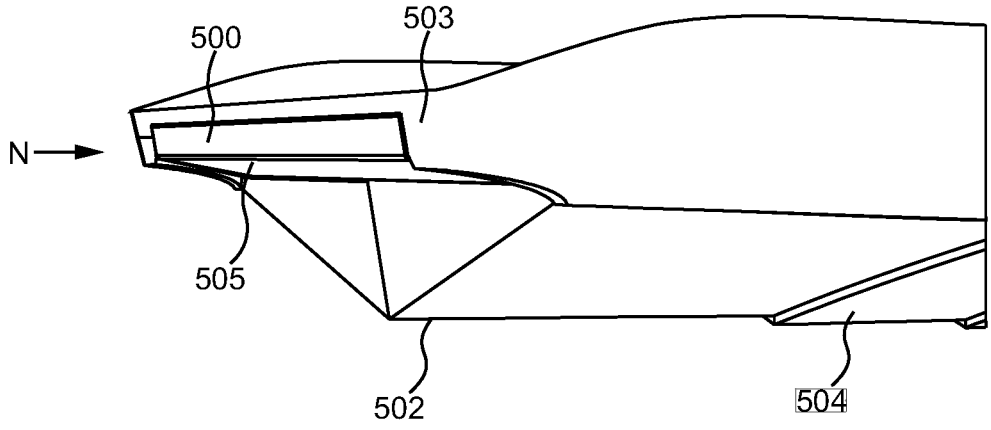


Fig. 16

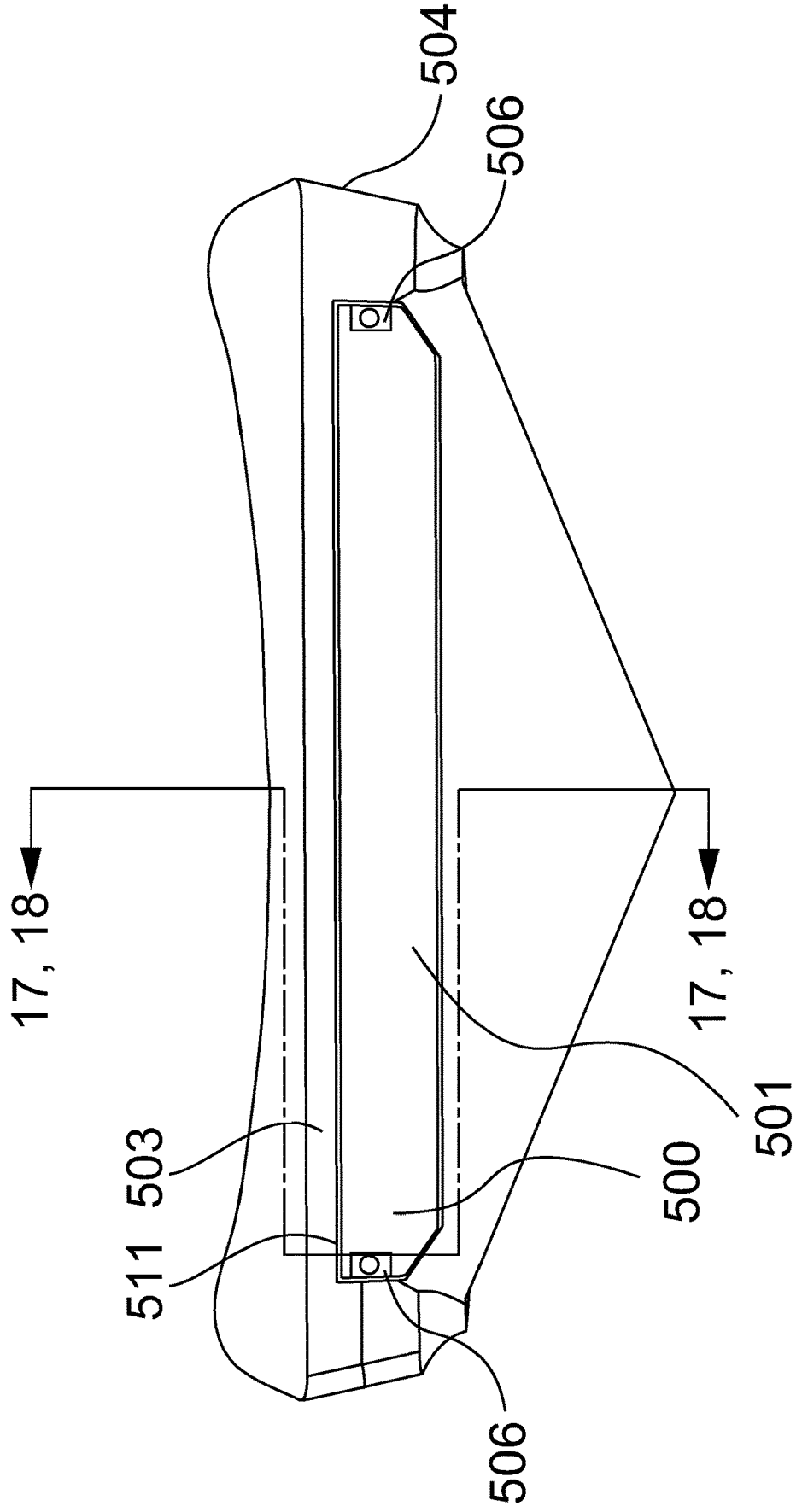


Fig. 16A

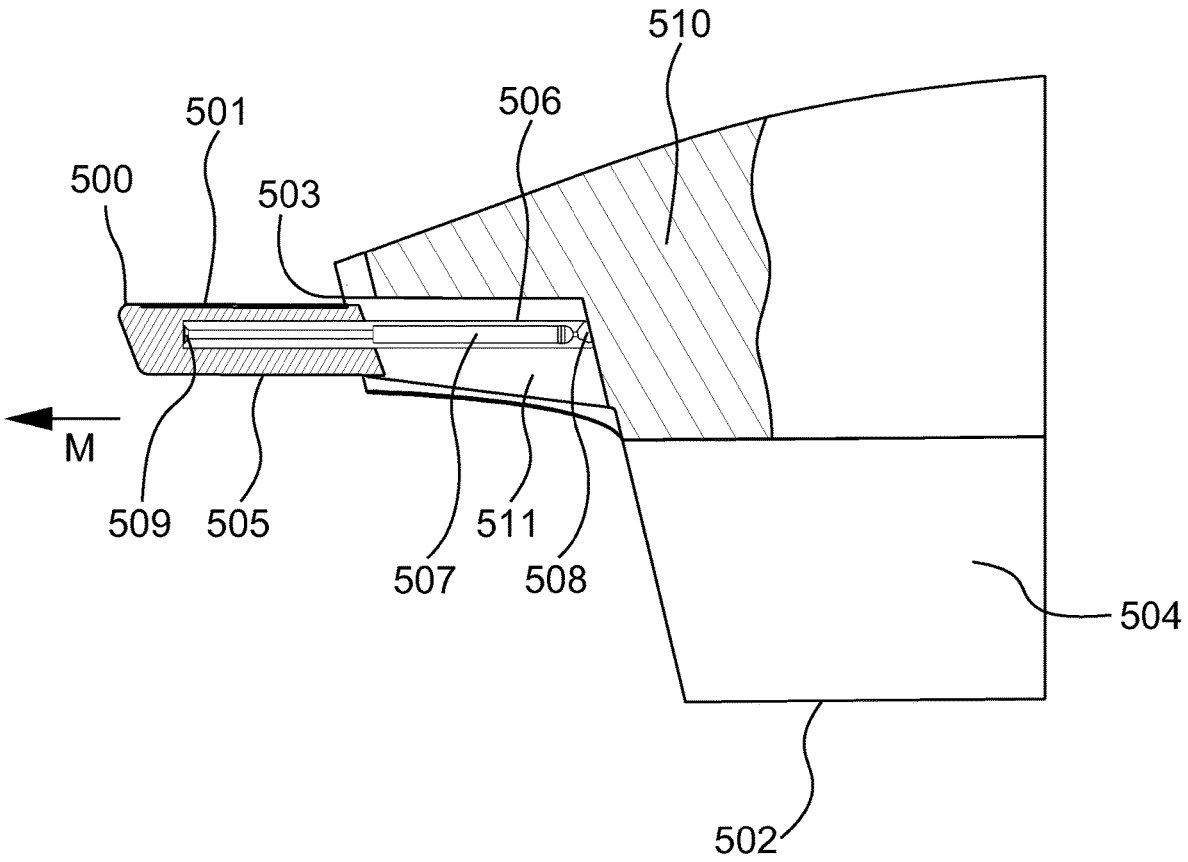


Fig. 17

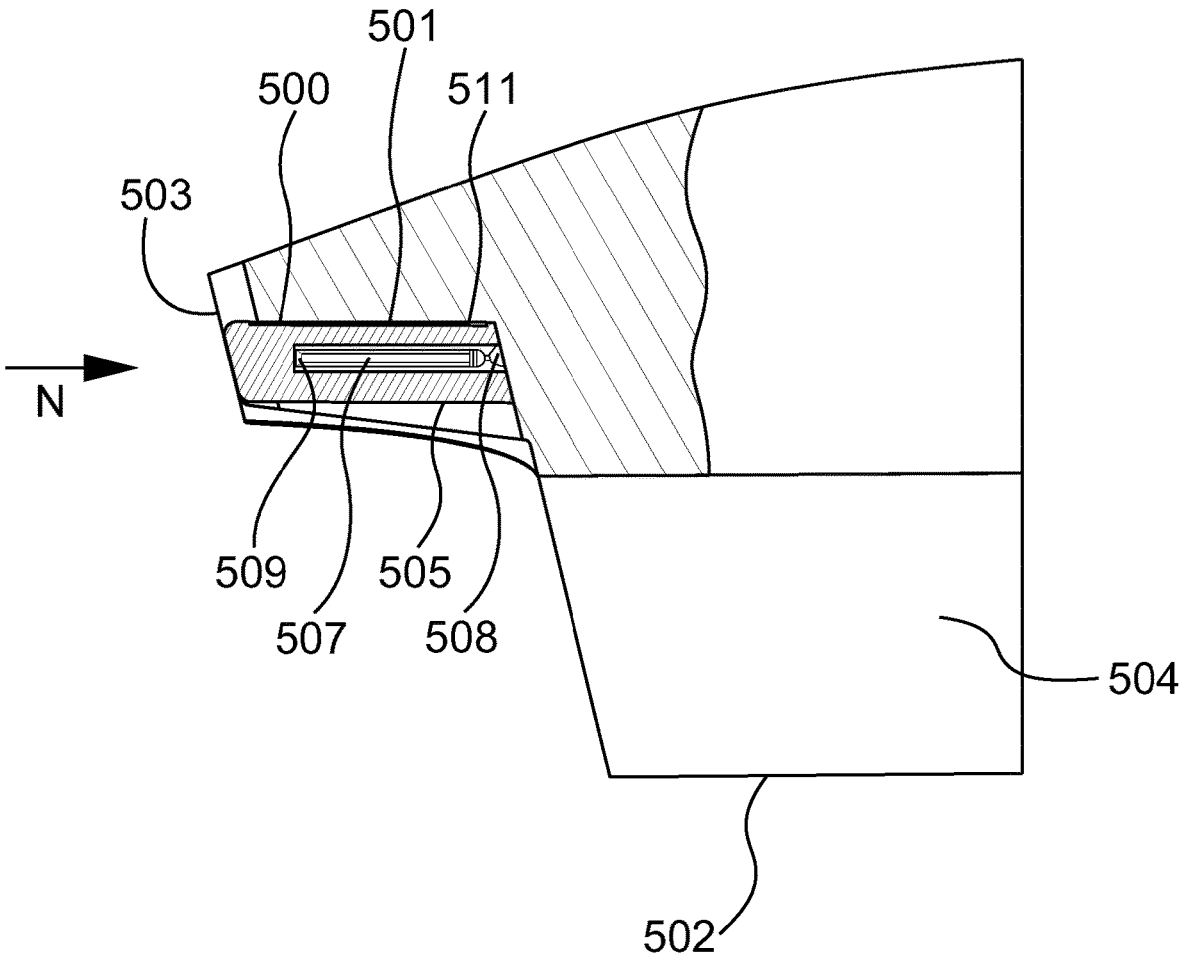
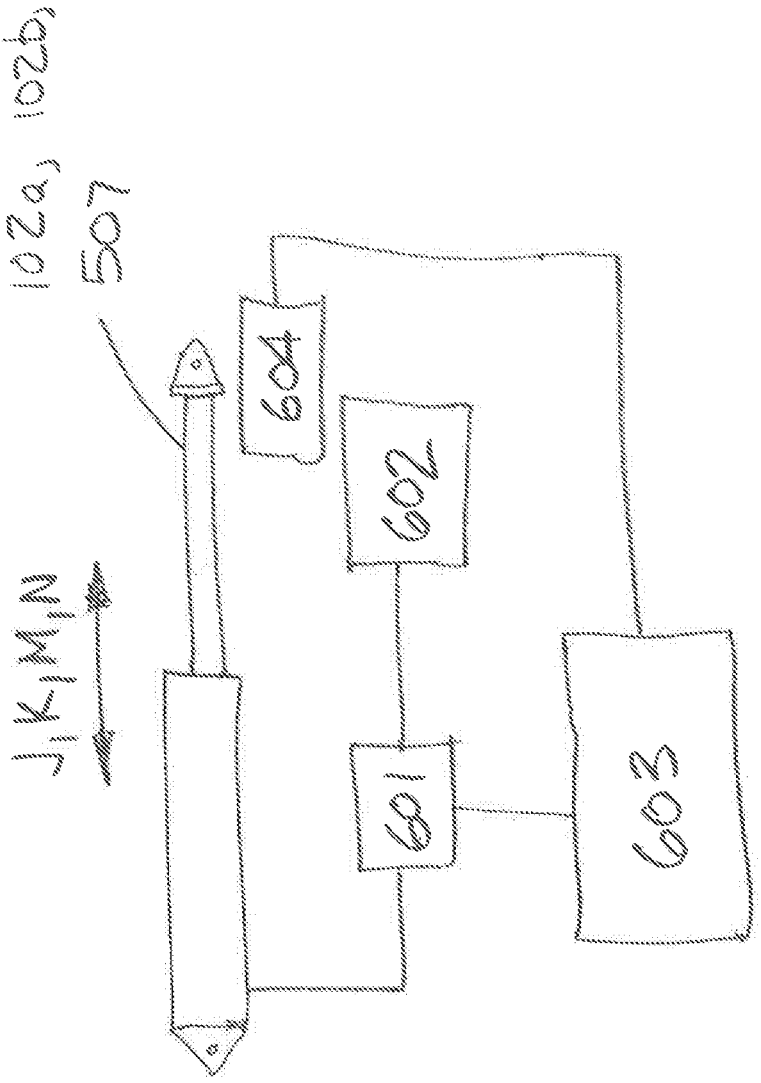


Fig. 18


102a, 102b
507
604
602
601
603
Fig. 9

WALK-ON AFT DECK AND EXTENDABLE SWIM PLATFORM SYSTEM AND METHOD

CROSS REFERENCE TO RELATED APPLICATIONS AND INCORPORATION BY REFERENCE

[0001] [Not applicable]

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not applicable.

INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISK

[0003] This non provisional patent application is a non-provisional of, and claims benefit of priority to, U.S. provisional patent application Ser. No. 62/856,901, filed in the United States Patent and Trademark Office (USPTO) on Jun. 4, 2019, entitled WALK-ON AFT DECK AND EXTENDABLE SWIM PLATFORM SYSTEM AND METHOD, which is hereby incorporated by reference in its entirety.

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0004] The field of the invention relates generally to systems and methods for providing an aft deck allowing a user to access and use the space between outboard engines of a boat, and for extendable swim platforms for boats or other watercraft. More specifically, the field of the invention relates to extendable swim platforms that may be retracted or extended to suit the purposes of the user.

2. Background Art

[0005] Boats with multiple outboard engines often suffer from the deficiency that the area between the engines and just aft of the transom is wasted space. Oftentimes, when these boats are used for fishing purposes or for other recreational purposes such as swimming, it is desired to be able to walk past the traditional transom line between the engines in an afterward direction to a point afterward of a rear most surface of the engines. Such a platform would be advantageous for fishing in that it would allow a greater range of casting possibilities for the fisherman, and allow the fisherman to walk aft in the boat, past the engines, to cast and retrieve in an unencumbered manner. Likewise, when the boat is used for recreational purposes such as towing skiers or wakeboarders, or acting as a platform for swimmers, such an aftermost protruding platform would allow a person to walk past the engines of a multi-engine boat and enter or exit the water more conveniently and safely due to the fact that the user would not have to climb around the engines to enter or exit the boat.

[0006] Likewise, in a recreational use of the boat in which persons desire to enter or exit a boat or other watercraft, it is common to have swim platforms facing rearward from the transom of the boat. However, in a multi-engine water craft, it may be difficult or impossible that such a swim platform would be disposed from the transom, due to interference from the outboard engines. Such prior art platforms are not retractable and form a running surface of the boat, affecting performance of the boat while under way. It is therefore desirable to have a swim platform that would extend afterward from a surface of the boat, extending afterward past the outboard engines, so that a swimmer could easily enter or exit the water or the boat without interference or danger from the engines or their spinning propellers. It is also desirable, but not required, that such an extending platform would be disposed above the waterline so that its surfaces do not form running surfaces when the boat is if a forward motion. Such a configuration would also provide an additional measure of safety for those entering or exiting the boat by keeping the user's torso and legs further away from the propellers of the engines than they would normally be should such a swim platform not be present.

[0007] Such above-described structures do not currently exist in the background art. Typically, the background art comprises a transom upon which two outboard engines are mounted. If one desires to fish near the transom area of the boat they must reach out over the engines to cast and to retrieve. Furthermore, if one wishes to use a typical multi-outboard engine boat, the entry and exit into the water must be accomplished by climbing around the engines or down between the engines, hoisting the users torso and legs in dangerous proximity to the propellers of the engines and creating difficulties in entering and exiting the boat.

[0008] What is needed in the art, therefore, is an apparatus and/or method for providing a platform extending beyond the afterward extent of outboard engines that allows a user to stand between or aft of the outboard engines for fishing or other purposes. The platform may further comprise an extendable swim platform that, when the boat is running in a forward direction, is above the surface of the water, but when the boat is moving in an afterward direction, i.e. is "backing down" or when the engines are operated in reverse, a lower surface or surfaces of the extendable swim platform provide surfaces for planing, preventing the after portions of boat from digging into the water as the boat is backed down. Further, would be desirable that the lower surface(s) of the extendable swim platform comprise angled portions that are not disposed in a plane parallel to the surface of the water, but rather comprise surfaces that may be, but are not necessarily, planar, that are disposed at an angle to the surface of the water, to prevent the water from "slapping" the lower surfaces of the extendable swim platform and causing an uncomfortable level of noise or vibration in the boat.

BRIEF SUMMARY OF THE INVENTION

[0009] The present invention comprises an apparatus and method that have one or more of the following features and/or steps, which alone or in any combination may comprise patentable subject matter.

[0010] The present invention overcomes the shortcomings of the prior art in that it provides an apparatus and/or method for providing a walk-on deck, or extended support platform, protruding afterward from the boat transom, extending between the engines and beyond the afterward extent of the outboard engines, that allows a user to stand between or aft of the outboard engines for fishing or other purposes. As an example, a user using the boat for fishing may stand on the walk-on deck, or extended support platform, protruding afterward from the boat transom and cleanly cast out over the back and sides of the boat without the need to stretch to cast over the outboard engines.

[0011] The invention may further comprise an extendable swim platform that, in embodiments, when the boat is running in a forward direction, has a lowermost surface that is above the water and is therefore not a running surface of the boat, but when the boat is moving in an afterward direction such as when the engines are operated in reverse, i.e. is "backing down", a lower surface or surfaces of the extendable swim platform may provide surfaces for planing, preventing the aft portions of the boat from digging into the water, forcing the transom down, as the boat is backed down. In boats of the prior art, the act of backing down typically causes the stern, or aftermost portion of the boat, to rotate downward into the surface of the water about an axis transverse to the longitudinal axis of the boat. Such "digging in" of the stern of the boat is typically undesirable. It is an object of the invention that a lowermost surface of the extendable swim platform operates to prevent such digging in during backing down, as the lowermost surface of the extendable swim platform contacts the water as the boat is backed down, creating an upward force on the stem of the boat and preventing digging in.

[0012] In other embodiments, the lower surface(s) of the extendable swim platform may be in contact with, or protrude into, the water when the boat is at rest. Further, in embodiments, the lower surface(s) of the extendable swim platform of the present invention may comprise angled portions that are not disposed in a plane parallel to the surface of the water, but rather comprise surfaces that are disposed at an angle to the surface of the water, or are not parallel to the surface of the water, in order to prevent the water from "slapping" the lower surfaces of the extendable swim platform and causing an uncomfortable level of noise or vibration in the boat. The extension of the platform beyond the afterward extent of the outboard engines protects the engines from damage by preventing the engines from impacting another boat, or the surfaces of a dock, or another structure against which the engines may impinge but for the existence of the inventive platform.

[0013] In accordance with an embodiment of the present invention, the invention comprises a walk-on aft deck for a multi-outboard engine boat that includes an extended support platform forming a walk-on aft deck, the extended support platform extending from an aftermost surface of a boat, which may be the transom of the boat, the extended support platform being disposed between engines of the boat, such that an aftermost surface of the extended support platform extends beyond an aftermost surface of the engines. The extended support platform may comprise a horizontally disposed support surface for supporting a user for walking, standing, fishing or performing other activities thereon. The extended support platform may be attached to, or may form a unitary structure with, the boat hull itself. The extended support platform may, in embodiments, comprise a lowermost surface that is disposed above the nominal waterline such that it does not form a running surface of the boat when the boat is motivated in a forward direction. In other embodiments, the lowermost surface of the extended support platform, or walk-on aft deck, may be in contact with the surface of a body of water the boat is disposed upon.

[0014] In accordance with some embodiments of the present invention, the extended support platform may further comprise a gunwale extending upwards from the periphery of the extended support platform, and the gunwale may be attached to, or forms a unitary structure with, a transom of the boat. In this embodiment, the gunwale may be continuous around the periphery of the extended support platform.

[0015] In accordance with some embodiments of the present invention, the extended support platform of the invention may be disposed on any boat or other watercraft with a plurality of outboard engines. In specific embodiments, the invention may be disposed on boats with two outboard engines, or with four, outboard engines.

[0016] In accordance with some embodiments of the present invention, the extendable swim platform of the invention may be disposed on any boat or other watercraft regardless of the number of engines on the boat, or whether they are outboard, inboard, outdrive, or otherwise.

[0017] In accordance with some embodiments of the present invention, the extended support platform, or walk-on aft deck, may comprise an extendable swim platform slidingly attached to an surface of the extended support platform, the sliding attachment enabling the extension of the extendable swim platform in an afterward direction to an extended position aft of the aftermost surface of the extended support platform.

[0018] In accordance with some embodiments of the present invention, a lowermost surface of the extendable swim platform remains above the nominal waterline such that it does not form a running surface of the boat when the boat is motivated in a forward direction.

[0019] In accordance with embodiments of the present invention, the extendable swim platform may further include a retractable ladder, that, when fully retracted into the extendable swim platform, presents an aft surface that is flush with the adjacent surface of the extendable swim platform.

[0020] In accordance with embodiments of the present invention, the extendable swim platform may include a lowermost surface that is disposed at an angle to the nominal waterline, the angle running along a longitudinal axis of the boat, and the angle having a vertex in a forward direction such that the angle opens in an aft direction. The extendable swim platform lowermost surface may form a planning surface with a surface of the water when the boat is motivated in an afterward direction, such as when the engines are engaged in reverse, as an aftermost portion of said boat hull begins to rotate downward towards the nominal waterline.

[0021] In accordance with embodiments of the present invention, the extendable swim platform lowermost surface further comprises at least one anti-slap surface, which may be but is not necessarily a planar surface, disposed at angle to the nominal surface of the water such that the extendable swim platform lowermost surface is not disposed in a plane that is parallel to the nominal surface of the water.

[0022] In accordance with embodiments of the present invention, the extendable swim platform may further comprise at least one actuator for motivating the extendable swim platform from a forward, or stowed, position to an afterward, or extended, position; and likewise is retractable from an afterward, or extended, position to a forward, or stowed, position. The at least one actuator may be, but is not necessarily, controllable to extend or retract. The at least one actuator may have a first end and a second extendable end, the first end attached to a surface of said boat, and said second end attached to a surface of the extendable swim platform. The at least one actuator may be selected from the group consisting of a hydraulic actuator, a pneumatic actua-

tor and an electric actuator. The at least one actuator may be in communication with a controller for controlling the extension or retraction of the actuator. In an embodiment, the invention may comprise two controllable actuators.

[0023] In various embodiments the present invention provides advantages over the prior art in that the extended support platform of the present invention adds additional usable floor space for a boat of given overall length; provides additional buoyancy for a boat of given overall length due to the gunwales extending upwards from the periphery of the extended support platform; and adds additional strength to the transom structure and engine mount structure over boats of the prior art that do not provide any significant supporting structure that is transverse to the plane of the transoms, such as is provided by the extended support platform and the gunwales extending upwards from the periphery of the extended support platform.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] The accompanying drawings, which are incorporated into and form a part of the specification, illustrate one or more embodiments of the present invention and, together with the description, serve to explain the principles of the invention. The drawings are only for the purpose of illustrating certain embodiments of the invention and are not to be construed as limiting the invention. In the figures, like item numbers refer to like features. In the drawings:

[0025] FIG. **1** depicts a perspective view of an embodiment of the invention, depicting the extendable swim platform of the invention fully extended, and a ladder of the invention extended for use.

[0026] FIG. **2** depicts a perspective view of an embodiment of an extendable swim platform **001** of the invention in an extended position, with ladder **003** retracted.

[0027] FIG. **3** depicts a perspective view of an embodiment of an extendable swim platform of the invention in an extended position, with a ladder retracted, mounted to a lower surface of an embodiment of the extended support platform of the invention.

[0028] FIG. **4** depicts a side view of an embodiment of an extendable swim platform of the invention in an extended position, with a ladder retracted, mounted to a lower surface of an embodiment of the extended support platform of the invention, with the covering of the extendable swim platform for ease of illustration of the actuators and slide assemblies of the invention.

[0029] FIG. **5** depicts a side view of an embodiment of an extendable swim platform of the invention in an extended position, with a ladder retracted, mounted to a lower surface of an embodiment of the extended support platform of the invention, with a portion of the outboard engine shown for illustrating the protrusion of the extended support platform beyond the rearmost surface of the outboard engine, thus providing protection for the outboard engine, and showing the distance of extension of an embodiment of the extendable swim platform beyond the rearmost surface of the extended support platform **112**.

[0030] FIG. **6** depicts a perspective view of an embodiment of an extendable swim platform of the invention in a retracted, or stowed, position, with a ladder also retracted, mounted to a lower surface of an embodiment of the extended support platform of the invention **002**, with the covering of the extendable swim platform removed for ease of illustration of the actuators **102***a* and **102***b*, and slide assemblies of the invention.

[0031] FIG. **7** depicts a perspective view of an embodiment of an extendable swim platform of the invention in a retracted, or stowed, position, with a ladder retracted, mounted to a lower surface of an embodiment of the extended support platform of the invention, with the outboard engines shown for illustrating the protrusion of the extended support platform beyond the rearmost surface of the outboard engine, thus providing protection for the outboard engine(s).

[0032] FIG. **8** depicts a perspective view of an embodiment of a slide of the invention.

[0033] FIG. **9** depicts a perspective view of a boat hull with a multi-engine configuration, showing an embodiment of the extended support platform and extendable swim platform of the invention. A longitudinal axis of the boat P is depicted, and the forward and afterward directions are identified as well as bow and stern, for reference.

[0034] FIG. **10** depicts a side view of an embodiment of the extended support platform and extendable swim platform of the invention, as it would appear while the boat is not in motion, and depicting that the lower surfaces of the extendable swim platform are disposed at a distance B from the surface of the water when the boat is not moving.

[0035] FIG. **11** depicts a side view of an embodiment of the extended support platform and extendable swim platform of the invention, as it would appear while the boat is being motivated in an afterward direction, i.e. is "backing down", and depicting that the lower surfaces of the extendable swim platform provide surfaces for planing as the boat is moving afterward, and causing lift D on the after portion of the boat, thus allowing the boat to be backed at greater speed.

[0036] FIG. **12** depicts a rear view of a two-engine application of the invention, and showing an embodiment of the extended support platform and extendable swim platform of the invention, as they would appear while the boat is not in motion, and depicting that the lower surfaces of the extendable swim platform are disposed at a distance B from the surface of the water when the boat is not moving.

[0037] FIG. **13** depicts a perspective view of an embodiment of the invention in which an extendable swim platform is shown in an extended position and is ready for a user to stand or sit upon it, in which the boat hull does not comprise an extended support platform. In this embodiment, the extendable swim platform extends along an aft surface of the boat.

[0038] FIG. **14** depicts a cross section view of an embodiment of the invention in which an extendable swim platform is shown in an extended position and is ready for a user to stand or sit upon it, in which the boat hull does not comprise an extended support platform. In this embodiment, the extendable swim platform extends along an aft surface of the boat.

[0039] FIG. **15** depicts a perspective view of an embodiment of the invention, shown from slightly underneath and slightly behind the boat, in which an extendable swim platform is shown in a retracted position so that it is stowed as it might be when the boat is in motion, in which the boat hull does not comprise an extended support platform. In this

embodiment, the extendable swim platform extends along an aft surface of the boat in a direction transverse to a longitudinal axis of the boat.

[0040] FIG. **16** depicts a perspective view of an embodiment of the invention, shown from the side and slightly behind the boat, in which an extendable swim platform is shown in a retracted position so that it is stowed as it might be when the boat is in motion, in which the boat hull does not comprise an extended support platform. In this embodiment, the extendable swim platform extends along an aft surface of the boat.

[0041] FIG. **16**A depicts a rearview of an embodiment of the invention in which an extendable swim platform is shown in a retracted position so that it is stowed as it might be when the boat is in motion, in which the boat hull does not comprise an extended support platform. In this embodiment, the extendable swim platform extends along an aft surface of the boat.

[0042] FIG. **17** depicts a cross section view of an embodiment of the invention, in which an extendable swim platform is shown in a an extended position and is ready for a user to stand or sit upon it, for example when the boat is not in motion, in which the boat hull does not comprise an extended support platform.

[0043] FIG. **18** depicts a cross section view of an embodiment of the invention, in which an extendable swim platform is shown in a retracted position so that it is stowed as it might be when the boat is in motion, in which the boat hull does not comprise an extended support platform. In this embodiment, the extendable swim platform extends along an aft surface of the boat.

[0044] FIG. **19** depict an exemplary embodiment of an actuator controller scheme of the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0045] The following documentation provides a detailed description of the invention.

[0046] As used herein, "nominal water line" means the line created by the intersection of the hull of a boat and a surface representing the mean extent to which the surface of the water reaches, in the area of water directly surrounding a boat, in which the boat is disposed.

[0047] As used herein, "sea" means any body of water such an ocean, bay, inlet, lake, river etc. and which may comprise any type of water such as fresh, salt, brine or otherwise.

[0048] As used herein, "running surface" includes within its meaning the surfaces of a boat hull that contact the water, such that the water runs along such surfaces, when the boat is motivated along the surface of a body of water.

[0049] As used herein, "forward" means in a direction running from the stern of a boat towards the bow of the boat.

[0050] As used herein, "afterward" means in a direction running from the bow of a boat towards the stern of the boat, and "aft" means the stern portion of the boat, and "aftermost" means a furthest distance in the afterword direction.

[0051] As used herein, "backing down" means to motivate a boat in a direction running from bow to stern, as when the engine(s) of the boat are placed in reverse and throttle is applied to motivate the boat in a backwards, or afterwards, direction.

[0052] As used herein, "planar" includes within it meaning any two-dimensional surfaces that may be flat, forming a flat plane, and two-dimensional surfaces that may be curved; i.e., having a curvilinear cross section so as to form a curved plane. Thus, planar surfaces include flat surfaces, curved surfaces, surfaces having a crown, and surfaces characterized by concave sections, convex sections, curved sections or other non-flat surface features.

[0053] As used herein, "longitudinal axis" of the boat means an axis that is defined by a line running from stern to bow, along a centerline of the boat.

[0054] Referring now to FIGS. **1** through **12**, exemplary embodiments of the walk-on aft deck or a multi-board engine boat are depicted. The extended support platform walk-on aft deck **002** may comprise a walk-on horizontally disposed support surface **116** for supporting a user, for example while fishing or standing, and gunwales **200** surrounding the walk on surface. Gunwales **200** may extend along the periphery of extended support platform walk-on aft deck **002**. The walk-on aft deck **002** may have an aftermost surface **112**. Gunwales **200** of the walk-on aft deck **002** may be attached to, or form a unitary part of, boat transom **110**. Boat hull **100** is shown for reference. The extended support platform walk-on aft deck **002** may form an opening between the intersection of the gunwales of the extended support platform walk-on aft deck **002** and the transom of the boat so as to allow a user to walk through the opening, passing through the transom and onto support surface **116** of the extended support platform walk-on aft deck **002**.

[0055] Still referring to FIGS. **1** through **12**, the walk-on aft deck may further comprise an extendable swim platform **001** that may be motivated in the direction of arrow J towards a fully extended position as depicted in FIG. **1** or may be motivated towards a fully retracted position direction in the direction K as indicated in FIG. **7**. The extendable swim platform **001** may have an upper surface for standing, climbing onto, sitting upon, diving from, or any other desired activity **109**. The extendable swim platform **001** may also comprise an extendable ladder **300** for climbing onto the extendable swim platform **002**. The extendable swim platform **001** may be slidingly engaged with an underneath surface of the extended support platform **002**, but may be attached to any surface of the boat, including, for example, an upper surface of the extended support platform **001**. Extendable swim platform **001** may be slidingly engaged to an underneath surface of extended support platform **002** by use of slide mechanisms **113***a* and **113***b* as is known in the art, an example of which is depicted in FIG. **8**. In embodiments, the slide mechanisms **113***a* and **113***b* of FIG. **8** have a slide car **107** sliding in slide track **108** in a sliding engagement. Track **108** may extend along shaft **105**. Slide mechanisms **113***a* and **113***b* may further comprise base number **106**. Car **107** may be attached to a surface of the extendable swim platform and **106** may be attached to a surface of the extended support platform, forming a sliding engagement between extendable swim platform **001** and a surface of the extended support platform **002**, allowing the extendable swim platform **001** to be extended or retracted by operation of actuators **102***a* and **102***b* as further described below. The scope of the invention is not to be limited to the particular form of exemplary slide mechanism depicted in the figures. Any form of slide mechanism(s) may comprise the invention, in any combination, as long as such slide mechanism is operable to create a sliding engagement along

a forward and aft direction between extendable swim platform **001** and extended support platform **002**.

[0056] Still referring to FIGS. **1** through **12**, the extendable swim platform **001** may be motivated by at least one, or a plurality of, actuators such as **102***a* and **102***b*. The actuators **102***a* and **102***b* may be hydraulic actuators, pneumatic actuators, electric actuators, or any type of actuator known in the art that are operable to extend or retract, or both, the extendable swim platform. In an embodiment the actuators **102***a* and **102***b* may be controllable such that they can be remotely controlled by a controller in communication with the actuators, for example from a control panel near the cockpit or other surface of the boat, including a control panel mounted onto the interior of the transom of the boat, so that extendable swim platform **001** may be extended or retracted by remote control. In an embodiment, the remote control of actuators **102***a* and **102***b* may be by a wireless or wired controller and communication with an actuator circuit commanding actuators **102***a* and **102***b*. In yet a further embodiment, actuators **102***a* and **102***b* may be non-controllable spring loaded or pneumatic assist type actuators, and a latching mechanism may be present for latching extendable swim platform **001** to an underneath surface of the extended support platform **002**. Actuators **102***a* and **102***b* may attach to a surface of the boat by attachment bracketry **103** which may take any form or shape as is known in the art, and is not limited to the particular form depicted in the figures. Actuators **102***a* and **102***b* may each have a first end and a second end. The first end may be attached to a surface of the boat such as, for example, at an attachment point **103** for attaching actuator **102***a* to the boat hull, and at an similar attachment point on the other side of the boat transom (not viewable in FIG. **5**). Actuators **102***a* and **102***b* may further each be attached to a surface of extendable swim platform **001** so that when actuators **102***a* and **102***b* are controlled to extend, causing them to lengthen, extendable swim platform **001** is motivated in the direction of arrow J away from the extended support platform, towards the extended position as depicted in FIG. **5**. When actuators **102***a* and **102***b* are controlled to retract, causing them to shorten, extendable swim platform **001** is motivated in the direction of arrow K towards the extended support platform, and towards the retracted position as depicted in FIG. **7**. The invention may comprise any number of actuators **102***n* similarly operable as actuators **102***a* and **102***b*. It is to understood that the scope of the invention may comprise any number of actuators. Extendable swim platform **001** may comprise a periphery surface **104** that is of the same shape and size, and there forms a match to, the periphery of extended support platform **002**.

[0057] Referring now specifically to FIG. **5**, a portion of an outboard engine **400**, having an after most surface **113**, is depicted. It can be seen that the after most surface **112** of extended support platform **002** extends beyond the after most surface **113** of outboard engine **400** by a distance G. This extension of the extended support platform beyond the after most surface of engine **400** provides protection to the engines of the boat so that, when backing or performing other boating operations, the engines of the boat are not the first elements of the boat to come into contact with other structures such as docks, piers or pilings. This provides a degree of protection for the boat engines. Still referring to FIG. **5**, the extendable swim platform **001** is depicted in a fully extended position in which the extendable swim platform **001** extends by a distance F from an after most surface **112** out of extended support platform **002**. Extendable ladder **300** is shown in a retracted position. When extendable ladder **300** is extended and lowered into the water it provides a structure allowing a user to climb onto surface **109** and to therefore enter the boat. Extendable platform **001** thus provides additional safety to a user in that it allows a user to enter and exit the boat or other watercraft further from engine **400** and its propeller than allowed by boat designs of the prior art.

[0058] Referring now specifically to FIG. **9**, a perspective view of a boat hull with a multi-engine configuration, showing an embodiment of the extended support platform and extendable swim platform of the invention, is depicted. A longitudinal axis of the boat P is depicted for reference, and the forward and afterward directions are identified as well as bow and stern portions of the boat, for reference.

[0059] Referring now specifically to FIG. **10**, a side view of a boat comprising an embodiment of the invention is depicted, in which the boat is at rest in a body of water having a nominal water line A. It can be seen from FIG. **10** that, in this non-limiting embodiment, the lower most surface **101** of extendable swim platform **001** may remain above nominal water line A by distance B. Thus, in this non-limiting embodiment, the surfaces of the extendable swim platform **001** and the extended support platform **002** are not running surfaces of the boat. Extended support platform gunwales **200** are shown for reference. This is an optional feature of the invention. In other embodiments, lowermost surface **101** may extend to, and even beneath, the surface of a body of water upon which boat is resting, and lowermost surface(s) **101** may form running surfaces of the boat.

[0060] Referring now to FIG. **11**, the boat is shown as being motivated in an afterward direction indicated by arrow E. In this figure, the boat is therefore shown as backing down (i.e., the engines are in reverse). The lower most surfaces **101** of extendable swim platform **001** are riding along the top surface of the water at the nominal water line A and are providing a planing running surface which creates an upwards force on the after portions of the boat indicated by arrow D. It is seen from this figure that the boat may be backed down, such as when the engines are placed in reverse, in the direction of arrow E at a much greater rate of speed than would normally be possible if the extended support platform **002** and extendable swim platform **001** of the invention were not present. It is this planing function of lower most surfaces **101** of extendable swim platform **001** on the nominal water line A that allow this increased rate of speed while backing down. In an embodiment, the engines of the boat may be run at full thrust in reverse, motivating the boat in the aft direction E without experiencing digging in of the stern portion of the boat into the water, which is not possible for transom/swim platform configurations of the prior art.

[0061] Referring now to FIG. **12** a rear view of a two engine application of the invention is depicted. Outboard engines **400** are disposed on the transom of the boat **110**. Between the engines an extended support platform **002** having gunwales **200** is disposed and extendable swim platform **001** is slidingly engaged with an underneath surface of extended support platform **002** and is separated from the nominal water line by a vertical distance B. In embodiments, extendable swim platform **001** lower surfaces **101**

may form a V shape, which consists of surfaces disposed at an angle to the plane formed by nominal water line A, i.e. are not parallel to the surface of the water, such that waves or wavelets travelling along nominal water line A do not cause a slapping condition to occur on surfaces **101** but rather are deflected without slapping due to the angle between surfaces **101** and nominal water line A. Surfaces **101** also operate to eliminate or greatly reduce slapping that occurs when a boat comprising the invention is "rocking" in the water such that the stern portion of the boat is rocked in an upwards and downwards motion due to wave action. If surfaces **101** were configured so as to be flat planes parallel to the surface of the water, such up-and-down rocking would cause slapping to occur as the stern portion of the boat travels down, causing the parallel planes of the lowermost surfaces **101** to smack, or slap, the surface of the water. However, the angled nature of surfaces **101**, resulting in a configuration in which surfaces **101** are not planes parallel to the surface of the water, eliminates or great reduces such slapping. Thus surfaces **101** are anti-slapping surfaces.

[0062] In some of the figures and in the description, embodiments of the extended support platform **002** and extendable swim platform **001** are discussed and shown in conjunction with a boat having two outboard engines. However, the invention may be utilized on any multi-engine boat or water craft having any number of engines. Thus the figures of the drawings and the written description describe an exemplary embodiment, and the invention is not intended to be limited to only two-engine applications.

[0063] In FIGS. **1-7** and **9-12**, extendable swim platform **001** is shown as being in a sliding engagement with extended support platform, or aft walk-on deck, **002**. However, in an embodiment, extendable swim platform **001** need not be present, and the invention may comprise extended support platform, or aft walk-on deck, **002**, without such an extendable swim platform **001**. In this embodiment, the extended support platform, or aft walk-on deck, **002** may extend down to encompass the volume that would have been encompassed by extendable swim platform **001** if it were present. In this embodiment, extended support platform, or aft walk-on deck, **002** may comprise angled lowermost surfaces **101** as hereinbefore described in relation to extendable swim platform **001**, including all the advantages described above in relation to surfaces **101**, namely planning during backing down, allowing hi-speed backing of the boat, and the anti-slap characteristics of surfaces **101**. The walk-on aft deck **002** may, but does not necessarily, have a lowermost surface(s) **101** that are above the nominal water line, and in this embodiment, the walk-on aft deck surfaces may not form running surfaces of the boat when the boat is moving in a forward direction.

[0064] Referring now to FIGS. **13-18**, embodiments of an extendable swim platform of the invention is depicted in which an extendable swim platform is incorporated into a boat that does not have an extended support platform **002**. In these embodiments of the invention, the extendable swim platform **500** may be formed of an elongate structure extending along an aft surface **503** of the boat hull, and may retracted into a recess **511** in the boat hull when motivated in direction N. These embodiments of the invention may be particularly useful for those applications in which the boat is not powered by outboard engines, but is instead powered by inboard engines or possibly outdrives. In embodiments, the extendable swim platform does not extend in an afterward direction past the aft surface **503** of the boat hull when it is fully retracted into recess **511**, as depicted in FIGS. **15**, **16** and **18**. In other embodiments, the extendable swim platform may extend in an afterward direction past the aft surface **503** of the boat hull when fully retracted into recess **511**. The extendable swim platform **500** is shown in a retracted state in FIGS. **15**, **16** and **18**. The extendable swim platform **500** is shown in an extended state in FIGS. **13**, **14**, and **17**. Extendable swim platform **500** may have an upper surface **501** for a user to walk, stand or sit upon. Further, extendable swim platform **500** may be used to assist a user in entering the stern area of the boat from the water by providing a structure which may be utilized by a user to support themselves as the pull themselves from the water. Still further, the extendable swim platform **500** may comprise one or more extendable swim ladders **300** in order to provide a structure that allows for easy access to the extendable swim platform from the water, and allows a user to easily climb onto surface **501** of extendable swim platform **500**. The extendable swim platform **500** may be motivated into an extended or retracted position by operation of one or more actuator(s) **507**. Actuator(s) **507** may be controllable to extend in the direction M or retract in the direction N upon command, and they may be in communication with a controller, switch or plurality of switches that are operable to extend or retract the actuator(s) when desired by a user. Actuator(s) **507** may have a first end attached to a surface of the boat hull at attachment point **508**, and a second retractable or extendable end attached to a surface of extendable swim platform **500** at attachment point **509**. The locations and attachment points of actuator(s) **507** as depicted in the drawings are exemplary; i.e., actuators **507** may be located anywhere, and attached to any surface, such that they are operable to extend extendable swim platform **500** in an afterward directions, or retract extendable swim platform **500** in a forward direction such that it retracts into recess **511**. When actuator(s) **507** are commanded to retract, they retract (i.e. they shorten in length), causing extendable swim platform **500** to be retracted into recess **511** in boat hull **504**. When actuator(s) **507** are commanded to extend, they extend (i.e. they increase in length), causing extendable swim platform **500** to be extended in an afterward direction, extending away from aft boat surface **503** such that extendable swim platform surface **501** is exposed and is usable as by a user as described herein. Extendable swim platform **500** may be slidingly engaged with surfaces of recess **511** in boat hull **504**, or with any other surfaces in boat hull **504**, by any means known in the art, such, for example and not by way of limitation, extendable slides **506** which comprise two structures in a sliding engagement, one structure attached to a surface of recess **511** in boat hull **504**, and one structure attached to a surface of extendable swim platform **500**. A non-limiting, exemplary embodiment of slides **506** are slide mechanisms **113***a* and **113***b* as depicted in FIG. **8** and described above. The invention may comprise one or a plurality of slides **506**. In the exemplary embodiment depicted in FIGS. **13-18**, the invention comprises two slides **506**, one slide **506** attached to each end of extendable swim platform **500**.

[0065] Still referring to FIGS. **13-18**, in embodiments, extendable swim platform elongate structure **500** may, but does not necessarily, comprise a lowermost surface **505** that remains above the nominal waterline such that it does not form a running surface of said boat when said boat is

motivated in a forward direction. Further, extendable swim platform may comprise an extendable swim platform in similar fashion to swim platform **300** as is depicted in FIG. **1**. The actuator(s) **507** may be any actuator known in the art that is operable to be controlled to retract or extend along its length, including but not limited to hydraulic actuators, pneumatic actuators and electric actuators. The actuator(s) may be in communication with switches or a controller as described below. In embodiments, the extendable swim platform lowermost surface **505** may be disposed at an angle to the nominal waterline, said angle running along a longitudinal axis of the boat, and having a vertex in a forward direction such that the angle opens in an aft direction. In embodiments, the extendable swim platform lowermost surface may form a planing surface with a surface of the water when the boat is motivated in a afterward direction, such as when the boat engines are in reverse, backing the boat down, as an aftermost portion of the boat hull begins to rotate downward towards the nominal waterline. In embodiments, the extendable swim platform lowermost surface may further comprise at least one anti-slap surface disposed at angle to a nominal surface of the water such that the extendable swim platform lowermost surface is not disposed in a plane that is parallel to the nominal surface of the water.

[0066] Referring now to FIG. **19**, in any of the embodiments the actuators **102***a*, **102***b*, and **507** of the invention may be controlled by one or more switches or controllers **603** that are operable to provide electric power or hydraulic or pneumatic pressure to the actuator when commanded by an operator of the invention. Switches or controller(s) **603** maybe in communication with valves or relays **601** that are operable to apply or remove electric power or hydraulic or pneumatic pressure from power source **602** to actuators **102***a*, **102***b*, and **507**, causing them to extend or retract as desired by a user. Power source **602** may be a source of electric power in the case in which the actuators are electric, a source of hydraulic pressure in the case in which the actuators are hydraulic, or pneumatic in the case in which the actuators are pneumatic. The invention may further comprise one or more limit switches **604** in communication with the one or more switches or controllers **603** for sensing when the extendable swim platform has reached a desired position along its direction of travel J, K, M, or N, such as fully extended position, fully retracted position, or partially extended position, and, which the desired position has been reached, the limit switches **604** may be operable to cause switches or controller(s) **603** to remove electric power or hydraulic or pneumatic pressure from the actuator so that the actuator is no longer actively seeking to extend or retract. Switches or controller(s) **603** may be configured to comprise a user interface such as switches, touchscreen, wireless interface with a mobile device or any other user interface known in the art for receiving input commands for extending or retracting the actuators of the invention as described herein.

[0067] In any of the embodiments, the features and elements of the invention may be present in any number, and in any combination. It is not necessary that every embodiment of the invention comprise every described feature and element of the invention.

[0068] The scope of the invention is intended to include all legally and structurally equivalent structures to those depicted in the figures and described in the written description.

[0069] In the figures, monohull boats are depicted for convenience; however the multi-hull boats are included with the scope of the invention as well.

[0070] Although a detailed description as provided in the attachments contains many specifics for the purposes of illustration, anyone of ordinary skill in the art will appreciate that many variations and alterations to the following details are within the scope of the invention. Accordingly, the following preferred embodiments of the invention are set forth without any loss of generality to, and without imposing limitations upon, the claimed invention. Thus the scope of the invention should be determined by the appended claims and their legal equivalents, and not merely by the preferred examples or embodiments given.

What is claimed is:

1. An walk-on aft deck for a multi-outboard engine boat, comprising:

an extended support platform, said extended support platform extending from a aftermost surface of a boat, between engines of the boat, such that an aftermost surface of said extended support platform extends beyond an aftermost surface of said engines;

wherein said extended support platform comprises a horizontally disposed support surface for supporting a user;

wherein said extended support platform is attached to, or is a part of, the boat hull; and

wherein said extended support platform further comprises a gunwale extending upwards from the a periphery of the extended support platform, and wherein said gunwale is attached to, or forms a unitary structure with, a transom or other aft structure of the boat.

2. The walk-on aft deck of claim **1**, wherein said extended support platform comprises a lowermost surface that is above the nominal waterline when the boat is at rest.

3. The walk-on aft deck of claim **1**, wherein said extended support platform comprises a lowermost surface that is above the nominal waterline such that it does not form a running surface of the boat when the boat is motivated in a forward direction.

4. The walk-on aft deck of claim **1**, further comprising an extendable swim platform slidingly attached to an underneath surface of said extended support platform, said sliding attachment enabling the extension of said extendable swim platform in a aft direction to an extended position aft of said aftermost surface of said extended support platform.

5. The walk-on aft deck of claim **4**, wherein a lowermost surface of said extendable swim platform remains above the nominal waterline such that it does not form a running surface of the boat when the boat is motivated in a forward direction.

6. The walk-on aft deck of claim **4**, wherein said extendable swim platform further comprises a retractable ladder.

7. The walk-on aft deck of claim **4**, wherein a lowermost surface of said extendable swim platform is disposed at an angle to the nominal waterline, said angle running along a longitudinal axis of said boat, and having a vertex in a forward direction such that the angle opens in an aft direction.

8. The walk-on aft deck of claim **8**, wherein said extendable swim platform lowermost surface forms a planning surface with a surface of a body of water when said boat is motivated in an afterward direction as an aftermost portion of said boat hull begins to rotate downward towards the nominal waterline.

9. The walk-on aft deck of claim **8**, wherein said extendable swim platform lowermost surface further comprises at least one anti-slap surface disposed at angle to a nominal surface of the water such that said extendable swim platform lowermost surface is not parallel to the nominal surface of the water.

10. The walk-on aft deck of claim **4**, wherein said extendable swim platform further comprises at least one controllable actuator for motivating said extendable swim platform from a forward, or stowed, position to an afterward, or extended, position; wherein said at least one actuator has a first end and a second extendable end, said first end attached to a surface of said boat, and said second end attached to a surface of said extendable swim platform.

11. The walk-on aft deck of claim **14**, wherein said at least one actuator is selected from the group consisting of a hydraulic actuator, a pneumatic actuator and an electric actuator.

12. The walk-on aft deck of claim **14**, wherein said at least one actuator is in communication with a controller for controlling the extension or retraction of said actuator.

13. An extendable swim platform for a boat, comprising

an elongate structure slidingly engaged with a surface of a boat hull, said sliding attachment enabling the extension of said elongate structure in an aft direction to an extended position;

a recess disposed in an aft surface of said boat for receiving said elongate structure when said elongate structure is in a retracted position;

at least one actuator having a first end and a second end, said first end attached to a surface of said boat and said second end attached to a surface of said aft of said elongate structure;

wherein said actuator is controllable to be extended, motivating said elongate structure in aft direction, exposing an upper surface of said elongate structure for use by a user; and

wherein said actuator is controllable to be retracted, motivating said elongate structure into a retracted position in which said elongate structure is received by said recess.

14. The extendable swim platform of claim **13**, wherein a lowermost surface of said extendable swim platform remains above the nominal waterline such that it does not form a running surface of said boat when said boat is motivated in a forward direction.

15. The extendable swim platform of claim **13**, wherein said extendable swim platform further comprises a retractable latter.

16. The extendable swim platform of claim **13**, wherein said extendable swim platform lowermost surface is disposed at an angle to the nominal waterline, said angle running along a longitudinal axis of said boat, and having a vertex in a forward direction such that the angle opens in an aft direction.

17. The extendable swim platform of claim **16**, wherein said extendable swim platform lowermost surface forms a planing surface with a surface of the water when said boat is motivated in a afterward direction as an aftermost portion of said boat hull begins to rotate downward towards the nominal waterline.

18. The extendable swim platform of claim **16**, wherein said extendable swim platform lowermost surface further comprises at least one anti-slap surface disposed at angle to a nominal surface of the water such that said extendable swim platform lowermost surface is not disposed in a plane that is parallel to the nominal surface of the water.

19. The extendable swim platform of claim **13** wherein said at least one actuator is selected from the group consisting of a hydraulic actuator, a pneumatic actuator and an electric actuator.

20. The extendable swim platform of claim **19**, wherein said at least one actuator is in communication with a controller operable to control the extension or retraction of said actuator.

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