

JUNCTION TYPE FLOATING DOCK AND EXTENDED FLOATING DOCK

CROSS-REFERENCE TO RELATED APPLICATION

This application claims the benefit of Korean Patent Application No. 2014-0077008, filed on June 24, 2014 in the Korean Intellectual Property Office, the
5 disclosure of which is incorporated herein by reference.

BACKGROUND

1. Field

Embodiments of the present invention relate to a joint type floating dock and an extended floating dock.

10 2. Description of the Related Art

When a ship or a large structure is built in a dockyard, a finishing work is performed while large blocks are loaded on a large platform called 'dock'.

Generally, for an efficient work, building and launching are performed together at a floating dock located on the sea rather than the land. The floating dock
15 has a ballast tank therein. When water is injected into the ballast tank, the floating dock sinks, and when the water is discharged from the ballast tank, the floating dock floats on the sea.

Since a usual floating dock has a rectangular shape having a long length in one direction, a square ship or marine facility has been built on the land or at an
20 offshore floating dock.

In Korean Patent Publication No.10-2011-0030754 (entitled "Extended floating dock"), there is disclosed an extended floating dock in which an extended part is installed at each of both side surfaces to accommodate a hull block. However, even in the extended floating dock disclosed in the prior art document, things which

may be accommodated in the extended part are limited to only components and mechanical devices, and it is impossible to be used in building a ship larger than the corresponding floating dock.

SUMMARY

5 Therefore, it is an aspect of the present invention to provide a joint type floating dock which may be used in building not only a rectangular ship or marine facility but also a square ship or marine facility.

 Also, it is another aspect of the present invention to provide a joint type floating dock which may be coupled to each other through a simple coupling
10 structure and thus may be used in building a large-scale square marine structure/ship.

 Additional aspects of the invention will be set forth in part in the description which follows and, in part, will be obvious from the description, or may be learned by practice of the invention.

15 In accordance with one aspect of the present invention,

BRIEF DESCRIPTION OF THE DRAWINGS

 These and/or other aspects of the invention will become apparent and more readily appreciated from the following description of the embodiments, taken in conjunction with the accompanying drawings of which:

20 FIG. 1 is a perspective view of a joint type floating dock according to one embodiment of the present invention, FIG. 2 is a perspective view illustrating a state in which the joint type floating dock is joined, FIG. 3 is a plan view of the joint type floating dock, and FIG. 4 is a view illustrating a joining process of the joint type floating dock.

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DETAILED DESCRIPTION

Although the present invention can be modified variously and have several embodiments, specific exemplary embodiments are illustrated in the accompanying drawings and will be described in detail in the detailed description. However, the present invention is not limited to the embodiments, and it should be understood that the present invention comprises all of equivalents and substitutes included in the technical scope and spirit of the invention.

It is to be noted that, in this specification, when a certain component is said to be connected to another component, the certain component may be directly connected to the other component, or a third component may be interposed therebetween. On the other hand, when a certain component is said to be directly connected to another component, no third component is interposed therebetween.

The terms used herein are merely to describe a specific embodiment, and do not limit the present invention. Further, unless the context clearly indicates otherwise, singular expressions should be interpreted to include plural expressions. It is understood that terms “comprises,” “comprising,” “includes” or “has” are intended to indicate the presence of features, numerals, steps, operations, elements and components described in the specification or the presence of combinations of these, and do not preclude the presence of one or more other features, numerals, steps, operations, elements and components, the presence of combinations of these, or additional possibilities.

Terms including ordinal numbers such as “first,” “second,” etc. can be used to describe various components, but the components are not limited by those terms. The terms are used merely for the purpose of distinguishing one component from another.

Also, terms “module” and “part” mentioned throughout the present description are units for processing at least one function or operation and may be realized by software means, hardware means or a combination of them.

Also, a constitution component of an embodiment described with reference to the drawings is not restrictively applied to only the corresponding embodiment and may be implemented to be included in another embodiment within the range of the technical spirit of the present invention and may also be re-implemented as one
5 embodiment in which a plurality of embodiments are integrated although a separate explanation is omitted.

Also, exemplary embodiments of the present invention will be described in detail with reference to the accompanying drawings, wherein like reference numerals refer to like or corresponding elements throughout the drawings and repeated
10 description thereof will be omitted. In the following description, if it is considered that the specific description of the related and noticed functions or structures may obscure the gist of the present invention, the specific description will be omitted.

FIG. 1 is a perspective view of a joint type floating dock according to one embodiment of the present invention, FIG. 2 is a perspective view illustrating a state
15 in which the joint type floating dock is joined, FIG. 3 is a plan view of the joint type floating dock, and FIG. 4 is a view illustrating a joining process of the joint type floating dock.

FIGS. 1 to 4 illustrate first and second joint type floating docks 100a and 100b, first and second hulls 110a and 110b, first and second decks 120a and 120b,
20 first and second fixed partitions 130a and 130b, first and second movable partitions 140a and 140b, first and second rails 125a and 125b, first and second wheels 145a and 145b, first and second joining parts 150a and 150b, an extended floating dock 200, and an extended deck 220.

The joint type floating dock according to one embodiment of the present
25 invention may be basically used in building a rectangular ship or marine facility and characterized by allowing a deck to extend by forming an extended floating dock through coupling with another joint type floating dock and also being used in building a large-scale square ship or marine facility, thereby being multipurpose.

Since the first joint type floating dock 100a and the second joint type

floating dock 100b has the same shape and function, description thereof will be provided focusing on the first joint type floating dock 100a.

The first joint type floating dock 100a according to the embodiment includes the first hull 110a and the first joining part 150a.

5 The first hull 110a is a part on which the building of the ship or the marine facility is performed and includes the first deck 120a on which a lot of blocks necessary to build the ship are put and the building operation is performed, the first fixed partition 130a installed at one side of the first deck 120a, and the first movable partition 140a installed to be movable between the other side of the first deck 120a
10 and the first fixed partition 130a.

 One or more ballast tanks into or from which seawater is introduced or discharged are disposed inside the first hull 110a, particularly the first deck 120a of the first joint type floating dock 100a. When the seawater is injected into the ballast tank, the first hull 110a is submerged below sea level, and when the seawater is
15 discharged from the ballast tank, the first hull 110a floats above sea level.

 In the embodiment, when the building operation is independently performed on only the first joint type floating dock 100a, the first hull 110a has a concave-shaped cross section, and the first deck 120a on which the building of the ship or the marine facility is performed is formed at a center portion thereof.

20 However, when the ship or the marine facility to be built is larger than the first deck 120a of the first joint type floating dock 100a and has a square shape, the deck on which the building operation is performed may extend through joining with the second joint type floating dock 100b, and thus the building operation may be smoothly performed.

25 To this end, the first joining part 150a is formed at a side surface of the first hull 110a of the first joint type floating dock 100a.

 In the first joining part 150a, a plurality of joining bars extending long

upward and downward are horizontally disposed in parallel at a lower side surface of the first deck 120a.

Each of the joining bars may have an engageable shape and arrangement to be engaged with joining bars of the second joint type floating dock 100b when being seen from an upper side. The drawings illustrate an example in which each of the joining bars is formed in a quadrangular pillar shape having a trapezoidal cross section. However, each of the joining bars may have a triangular pillar shape according to embodiments.

That is, when the first joining part 150a of the first joint type floating dock 100a and the second joining part 150b of the second joint type floating dock 100b are joined and coupled to each other, the first joining part 150a and the second joining part 150b may be completely and firmly engaged and coupled with each other.

A buffer means (not shown) for absorbing a shock and preventing a damage during a joining process may be attached on a surface of the joining bars.

The first movable partition 140a is movably installed at an upper portion of the lower side surface thereof at which the first joining part 150a is provided, and the first fixed partition 130a is installed at an opposite portion thereof.

The first wheel 145a is installed at a lower portion of the first movable partition 140a. Accordingly, the first wheel 145a may be travelled along the first rail 125a installed on an upper surface of the first deck 120a, and thus the first movable partition 140a may be moved toward the first fixed partition 130a.

When the building operation is independently performed on only the first joint type floating dock 100a, the first movable partition 140a is fixed to an upper side of the first deck 120a at which the first joining part 150a is provided, and thus the first hull 110a has the concave-shaped cross section. In a state of the extended floating dock 200 in which the two joint type floating docks 100a and 100b are coupled, the first movable partition 140a and the second movable partition 140b may be moved toward the first fixed partition 130a and the second fixed partition 130b, respectively,

and thus the extended deck 220 may be formed at the extended floating dock 200.

A fixing means (not shown) for fixing the first movable partition 140a is provided at a side portion of the upper surface of the first deck 120a at which the first joining part 150a is provided or a front surface portion of the first fixed partition 130a, and thus the first movable partition 140a may be moved or fixed as necessary. For example, the fixing means may be a fixing wood member which is removably installed at a front side and a rear side in a moving direction of the first wheel 145a to restrict movement of the first wheel 145a.

Alternatively, a braking means (not shown) for restricting rotation of the first wheel 145a may be provided at the first wheel 145a of the first movable partition 140a so that the first movable partition 140a is fixed at a desired position.

According to the embodiment, the building of the rectangular marine facility or ship may be independently performed on the joint type floating dock 100a, and the building of the square marine facility or ship 1 may be performed in a coupled state with another joint type floating dock 100b.

FIG. 4 illustrates the joining process on the extended floating dock 200 as one coupled body.

First, the two joint type floating docks 100a and 100b are located so that the first and second joining parts 150a and 150b face each other (referring to FIG. 4A).

Then, the two joint type floating docks 100a and 100b are moved toward each other, and thus the first and second joining parts 150a and 150b are coupled to each other (referring to FIG. 4B). In this case, although the hulls are connected as one body, the deck is divided into two parts.

Therefore, the extended deck 220 is formed by moving each of the first and second movable partitions 140a and 140b toward each of the first and second fixed partitions 130a and 130b, and an operation space in which the building of the large-scale square marine facility or ship 1 is performed may be ensured.

In the case of the extended floating dock 200 formed by the joining, a ballasting operation in the first joint type floating dock 100a and the second joint type floating dock 100b may be performed by being interlocked with each other, and thus the extended deck 220 may be maintained horizontally.

5 Also, a fixing groove (not shown) may be formed at each of the first deck 120a and the second deck 120b, and a fixing means (not shown) having a fixing protrusion formed at each of both ends thereof may be fitted into the fixing groove of the first and second decks 120a and 120b, and thus the first joint type floating dock 100a and the second joint type floating dock 100b may be prevented from being
10 separated from each other.

According to the embodiment of the present invention, it is possible to be used in building not only a rectangular ship or marine facility but also a square ship or marine facility.

Also, it is possible to be coupled to each other through the simple coupling
15 structure, thereby being used in building a large-scale square marine structure/ship.

Although a few embodiments of the present invention have been shown and described, it would be appreciated by those skilled in the art that changes may be made in these embodiments without departing from the principles and spirit of the invention, the scope of which is defined in the claims and their equivalents.

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WHAT IS CLAIMED IS:

1. A joint type floating dock comprising:

a hull including a deck, a fixed partition installed at one side of the deck and a movable partition installed to be movable between the other side of the deck and the fixed partition; and

a joining part provided at a portion of a side surface of the hull opposite to an installation position of the fixed partition.

2. The floating dock according to claim 1, wherein the movable partition is fixed to the other side of the deck upon an independent operation, and

the movable partition is moved toward the fixed partition when being joined with another joint type floating dock.

3. The floating dock according to claim 1, wherein a wheel is installed at a lower portion of the movable partition, and

a rail configured to allow the wheel to be travelled thereon is installed on an upper surface of the deck.

4. The floating dock according to claim 3, wherein a fixing means for restricting movement of the wheel is installed at the other side of the deck or a front surface portion of the fixed partition.

5. The floating dock according to claim 1, wherein a plurality of joining bars extending long upward and downward are horizontally disposed in parallel at the joining part, and

each of the joining bars is formed in a pillar shape having a trapezoidal or triangular cross section.

6. An extended floating dock comprising:

a first joint type floating dock including a first hull which includes a first deck, a

first fixed partition installed at one side of the first deck and a first movable partition installed to be movable between the other side of the first deck and the first fixed partition, and a first joining part provided at a portion of a side surface of the first hull opposite to an installation position of the first fixed partition; and

5 a second joint type floating dock including a second hull which includes a second deck, a second fixed partition installed at one side of the second deck and a second movable partition installed to be movable between the other side of the second deck and the second fixed partition, and a second joining part provided at a portion of a side surface of the second hull opposite to an installation position of the
10 second fixed partition,

 wherein the first joint type floating dock and the second joint type floating dock are joined with each other by engaging the first joining part with the second joining part, and the first deck and the second deck are connected by moving the first movable partition and the second movable partition toward the first fixed partition and
15 the second fixed partition, respectively, and thus an extended deck is formed.

7. The extended floating dock according to claim 6, wherein a first fixing groove and a second fixing groove are formed at the first deck and the second deck, respectively, and

 a fixing means having a fixing protrusion formed at each of both ends thereof is fitted into each of the first fixing groove and the second fixing groove, and thus the first joint type floating dock and the second joint type floating dock are prevented from being separated from each other.