[0010]

Patent Document 1: International Publication No. 2013/065826

Patent Document 2: Japanese patent application Kokai publication No. 2012-201219

Patent Document 3: Japanese patent application Kokai publication No. Hei 10-236385

SUMMARY OF THE INVENTION

PROBLEMS TO BE SOLVED BY THE INVENTION

[0011]

The present invention has been made in view of the above-described circumstances, and an object of the present invention is to provide a method of constructing an offshore structure and an offshore structure which can moor an offshore structure safely at an offshore installation site without using a crane vessel in a method of constructing a floating structure such a spar type with a wind turbine or the like mounted thereon.

MEANS FOR SOLVING THE PROBLEMS

[0012]

According to an aspect of the present invention, there is provided a method for constructing an offshore structure, characterized in that the method comprises: a manufacturing step of manufacturing an offshore structure separated in an upper structure and a lower structure; an in-water keeping step of keeping part or whole of the lower structure in an upright standing state in water; a moving step of moving the upper structure to above the lower structure kept in the upright standing state; an uniting step of performing a raising step of raising the lower structure to arrange the lower structure on a lower side of the upper structure; and a joining step of integrating the lower structure with the upper structure.

[0012a]

In some examples a method of constructing an offshore structure of the present invention for achieving the above-described object is a method for constructing an offshore structure, characterized in that the method includes: a manufacturing step of manufacturing an offshore structure separated in an upper structure and a lower structure; an in-water keeping step of keeping part or whole of the lower structure in an upright standing state in water; a moving step of moving the upper structure to above the lower structure kept in the upright standing state; an uniting step including one or both of an raising step of raising the lower structure to arrange the lower structure on a lower side of the upper structure and a lowering

state during the joining step. Accordingly, the joining work can be easily performed. Alternatively, when a mooring-line connecting step of connecting the upper structure to a mooring base with a mooring line is provided after the carrying step and before the joining step, the joining work can be performed at the stage where the upper structure is mounted and stable on the carrier vessel and the load by the lower structure is not applied to the arm-shaped structures of the carrier vessel.

[0027]

Alternatively, in the above-described method of constructing a floating structure, when a mooring-line connecting step of connecting the integrated upper structure and lower structure to a mooring base with a mooring line is provided after the joining step, in a case where the connection portion of the mooring line on the floating structure side is situated on the lower structure side, the connecting work between the lower structure and the mooring line can be performed not in the water but above the water level, and also in a safe environment where the upper and lower structures are mounted and fixed on the carrier vessel, and the joining work can thus be efficiently performed. Note that when the carrier vessel or the arm-shaped structures thereof are obstacle to connecting the mooring line, the connecting work for the mooring line may be performed after the floating step.

[0028]

Then, in various examples, a floating structure of the present invention for achieving the above-described object is configured such that the floating structure includes: an upper structure and a lower structure joined to each other, and is configured to be disposed on a sea, and for the upper structure to be capable of being

CLAIMS

[Claim 1]

A method for constructing an offshore structure, characterized in that

the method comprises:

a manufacturing step of manufacturing an offshore structure separated in an upper structure and a lower structure;

an in-water keeping step of keeping part or whole of the lower structure in an upright standing state in water;

a moving step of moving the upper structure to above the lower structure kept in the upright standing state;

an uniting step of performing a raising step of raising the lower structure to arrange the lower structure on a lower side of the upper structure; and

a joining step of integrating the lower structure with the upper structure.

[Claim 2]

The method of constructing an offshore structure according to claim 1, characterized in that in the raising step, the lower structure is raised by using a winch mounted on a carrier vessel for moving at least one of the upper structure and the lower structure.

[Claim 3]

The method of constructing an offshore structure according to claim 1 or 2, characterized in that

the joining step is a step of integrating the lower structure with the upper structure in a state where the upper structure is held by the pair of arm-shaped structures of the

carrier vessel,

the method comprises: between the manufacturing step and the in-water keeping step,

a mounting step of mounting the upper structure in an upright standing state on a carrier vessel including a ballast tank and a pair of arm-shaped structures protruding from an end portion, which is a bow or a stern, of a hull of the carrier vessel in a bow-stern direction;

a carrying step of carrying the upper structure and the lower structure one by one or simultaneously to an offshore installation site by means of the carrier vessel; and

a launching step of hanging the lower structure down from the carrier vessel by means of a hanging line and lowering the lower structure into the water, and

the method also comprises: after the joining step,

a floating step of unloading the integrated upper structure and lower structure from the carrier vessel and floating the integrated upper structure and lower structure on the sea.

[Claim 4]

The method of constructing an offshore structure according to claim 3, characterized in that

in the floating step, when the integrated upper structure and lower structure are unloaded from the carrier vessel, part of the carrier vessel is submerged.

[Claim 5]

The method of constructing an offshore structure according to claim 3 or 4, characterized in that

in the launching step, the lower structure is settled on the sea bed.

[Claim 6]

The method of constructing an offshore structure according to any one of claims 3 to 5, characterized in that

the method further comprises: after the carrying step and before the joining step,

a mooring-line connecting step of connecting the upper structure or the lower structure to a mooring base with a mooring line.

[Claim 7]

The method of constructing an offshore structure according to any one of claims 3 to 5, characterized in that

the method further comprises: after the joining step,

a mooring-line connecting step of connecting the integrated upper structure or lower structure to a mooring base with a mooring line.