【CLAIMS】

1. A wind power generator assembly moving apparatus comprising:

a rail installed on a dedicated wind power generator installing ship such that one end thereof is located inside an operation radius of a crane and an opposite end thereof is located outside the operation radius of the crane;

a movable deck installed to be movable along the rail and provided such that a wind power generator assembly is loaded on the movable deck;

a driving unit provided to move the movable deck; and

an anchoring unit provided to fix the wind power generator assembly loaded on the movable deck to the movable deck.

2. The wind power generator assembly moving apparatus of claim 1, wherein the driving unit comprises an electric motor.

3. The wind power generator assembly moving apparatus of claim 1 or 2, wherein the rail corresponds to a T-shaped beam extending in parallel and having a web and a flange formed on the web to be perpendicular to the web, and the movable deck comprises a rolling unit including a main roller formed to correspond to an upper surface of the

flange of the T-shaped beam and a plurality of ancillary rollers formed to correspond to opposite sides of a lower surface of the flange of the T-shaped beam.

4. The wind power generator assembly moving apparatus of claim 2, wherein the driving unit comprises a pinion installed in the movable deck and rotated by the electric motor, and a rack formed along a side surface of the rail and engaged with the pinion such that the movable deck is movable as the pinion rotates.

5. The wind power generator assembly moving apparatus of claim 4, wherein the electric motor comprises a frequency converter for driving, and a transformer for adjusting a voltage of the motor according to a load.

6. The wind power generator assembly moving apparatus of claim 1, wherein the driving unit comprises a hydraulic motor.

7. The wind power generator assembly moving apparatus of claim 1 or 6, wherein the rail corresponds to a T-shaped beam extending in parallel and having a web and a flange formed on the web to be perpendicular to the web, and the movable deck comprises a rolling unit including a

main roller formed to correspond to an upper surface of the flange of the T-shaped beam and a plurality of ancillary rollers formed to correspond to opposite sides of a lower surface of the flange of the T-shaped beam.

8. The wind power generator assembly moving apparatus of claim 6, wherein the driving unit comprises a pinion installed in the movable deck and rotated by the hydraulic motor, and a rack formed along a side surface of the rail and engaged with the pinion such that the movable deck is movable as the pinion rotates.

9. The wind power generator assembly moving apparatus of claim 8, wherein the hydraulic motor includes a protection box for preventing contamination thereof in the case of leakage of hydraulic oil.

10. The wind power generator assembly moving apparatus of claim 1, wherein the driving unit comprises a pair of winches installed on the ship to be rotated, and a pair of wires wound on the winches and each of which has one end connected to the movable deck.

11. The wind power generator assembly moving apparatus of claim 10, wherein the winches are installed at

front and rear ends of the movable deck and provided such that the movable deck reciprocates.

12. The wind power generator assembly moving apparatus of claim 1, wherein the anchoring unit comprises a plurality of support cylinders each of which has one end connected to the movable deck on the dedicated wind power generator installing ship to be rotated and an opposite end connected to a wind power generator assembly to be rotated.

13. The wind power generator assembly moving apparatus of claim 12, wherein the anchoring unit further comprises load cells installed in the support cylinders to detect hydraulic pressure, and a control unit for controlling the support cylinders such that the wind power generator assembly is balanced in response to signals transferred from the load cells.

14. The wind power generator assembly moving apparatus of claim 12 or 13, wherein the anchoring unit further comprises ancillary cylinders for repair of the support cylinders installed between housings of the support cylinders and the movable deck.

15. A method of transporting and loading/unloading

a wind power generator assembly by using a wind power generator assembly moving apparatus, the method comprising:

assembling a wind power generator on the land;

sequentially loading a plurality of assembled wind power generators on a movable deck installed to be movable on a rail of a dedicated wind power generator installing ship;

fixing the wind power generators loaded on the movable deck by using an anchoring unit;

moving the dedicated ship from a harbor where the wind power generator assembly is loaded to a wind power generator installing offshore region;

unloading the wind power generators loaded on the movable deck which are inside an operation radius of a crane of the dedicated ship by using the crane; and

moving the wind power generators on the movable decks sequentially disposed on the rail into the operation radius of the crane to sequentially unload the wind power generators.

16. The method of claim 15, wherein a driving unit for the movable deck includes at least one selected from a winch, an electric motor, and a hydraulic motor.

【CLAIMS】

1. A wind power generator assembly moving apparatus comprising:

a rail having one end located inside an operation radius of a crane and an opposite end located outside the operation radius of the crane;

a movable deck movable along the rail and provided thereon with a wind power generator assembly;

a driving unit provided to move the movable deck; and

an anchoring unit provided to fix the wind power generator assembly loaded on the movable deck to the movable deck.

2. The wind power generator assembly moving apparatus of claim 1, wherein the driving unit comprises an electric motor.

3. The wind power generator assembly moving apparatus of claim 1 or 2, wherein the rail corresponds to a T-shaped beam extending in parallel and having a web and a flange formed on the web to be perpendicular to the web, and the movable deck comprises a rolling unit including a main roller formed to correspond to an upper surface of the flange of the T-shaped beam and a plurality of ancillary rollers formed to correspond to opposite sides of a lower surface of the flange of the T-shaped beam.

4. The wind power generator assembly moving apparatus of claim 2, wherein the driving unit comprises a pinion

installed in the movable deck, and a rack formed along a side surface of the rail and engaged with the pinion such that the movable deck is movable as the pinion rotates.

5. The wind power generator assembly moving apparatus of claim 4, wherein the electric motor comprises a frequency converter for driving, and a transformer for adjusting a voltage of the motor according to a load.

6. The wind power generator assembly moving apparatus of claim 1, wherein the driving unit comprises a hydraulic motor.

7. The wind power generator assembly moving apparatus of claim 1 or 6, wherein the rail corresponds to a T-shaped beam extending in parallel and having a web and a flange formed on the web to be perpendicular to the web, and the movable deck comprises a rolling unit including a main roller formed to correspond to an upper surface of the flange of the T-shaped beam and a plurality of ancillary rollers formed to correspond to opposite sides of a lower surface of the flange of the T-shaped beam.

8. The wind power generator assembly moving apparatus of claim 6, wherein the driving unit comprises a pinion installed in the movable deck and a rack formed along a side surface of the rail and engaged with the pinion such that the movable deck is movable as the pinion rotates.

9. The wind power generator assembly moving apparatus of claim 8, wherein the hydraulic motor includes a protection box for preventing contamination thereof in the case of leakage of hydraulic oil.

10. The wind power generator assembly moving apparatus of claim 1, wherein the driving unit comprises a pair of winches rotated on a ship, and a pair of wires wound on the winches and each of which has one end connected to the movable deck.

11. The wind power generator assembly moving apparatus of claim 10, wherein the winches are installed at front and rear ends of the movable deck and provided such that the movable deck reciprocates.

12. The wind power generator assembly moving apparatus of claim 1, wherein the anchoring unit comprises a plurality of support cylinders each of which has one end rotatably connected to the movable deck on the dedicated wind power generator installing ship and an opposite end rotatably connected to a wind power generator assembly.

13. The wind power generator assembly moving apparatus of claim 12, wherein the anchoring unit further comprises load cells installed in the support cylinders to detect hydraulic pressure, and a control unit for controlling the support cylinders such that the wind power generator assembly is balanced in response to signals transferred from the load

cells.

14. The wind power generator assembly moving apparatus of claim 12 or 13, wherein the anchoring unit further comprises ancillary cylinders for repair of the support cylinders installed between housings of the support cylinders and the movable deck.

15. A method of transporting and loading/unloading a wind power generator assembly by using a wind power generator assembly moving apparatus, the method comprising:

assembling a wind power generator on the land;

sequentially loading a plurality of assembled wind power generators on a movable deck installed to be movable on a rail of a dedicated wind power generator installing ship;

fixing the wind power generators loaded on the movable deck by using an anchoring unit;

moving the dedicated ship from a harbor where the wind power generator assembly is loaded to a wind power generator installing offshore region;

unloading the wind power generators loaded on the movable deck which are inside an operation radius of a crane of the dedicated ship by using the crane; and

moving the wind power generators on the movable decks sequentially disposed on the rail into the operation radius of the crane to sequentially unload the wind power generators.

16. The method of claim 15, wherein a driving unit for the movable deck includes at least one selected from a winch, an electric motor, and a hydraulic motor.