Claims

1. An offshore drilling vessel comprising:

- a hull with a bow and a stern and a main deck therebetween;
- a moonpool extending through the hull;
- a drilling mast having a top side and a base with a transverse girder connected to the hull and extending over the moonpool between sections of the hull on port and starboard side of the moonpool, the base being spaced from a bow side of the moonpool and from a stern side of the moonpool, thereby forming a first and second moonpool area, wherein the mast has an associated first side and an opposed second side;
- a first hoisting device supported by the mast and having a load attachment device displaceable along a first firing line which extends on the outside of and adjacent to the first side of the mast and through the first moonpool area; the first hoisting device being adapted to build and lower a riser string at the first side of the mast;
- a second hoisting device supported by the mast and having a load attachment device displaceable along a second firing line, which extends on the outside of and adjacent to the second side of the mast and through the second moonpool area, the second hoisting device being provided with a rotary drilling drive and being adapted to assemble and disassemble a drill string at the second side of the mast and to effect drilling in the associated second firing line;
- a riser tensioner system arranged at the second moonpool area, adapted to suspend the riser string from;
- a suspended riser transfer device, which includes a support frame and a pair of associated rails which extend in longitudinal direction along the moonpool, being adapted to displace the support frame while the support frame supports the riser string, built by the first hoisting device, from the first moonpool area underneath the base of the mast to the riser tensioner system arranged at the second moonpool area, where the riser string is attachable to the riser tensioner system.

2. The offshore drilling vessel according to claim 1, further comprising a BOP (Blow Out Preventer) storage in the hull of the vessel adjacent the moonpool,
wherein the first hoisting device is adapted to build and lower a riser string with BOP attached to the lower end thereof at the first side of the mast.

3. The offshore drilling vessel according to claim 1, wherein the support frame is embodied as a skid cart.

4. The offshore drilling vessel according to claim 1, wherein the support frame has one or more mobile riser suspension members for suspending the riser string.

5. The offshore drilling vessel according to claim 2, wherein the support frame has one or more actuable BOP support members to directly support the BOP on the frame.

6. A drilling method of using the offshore drilling vessel according to claim 1, comprising the steps of:

- building a riser string of interconnected risers at the first side of the mast;
- lowering the riser string in the first firing line through the first moonpool area;
- providing a riser tensioner system at the second moonpool area;
- supporting the riser string at the first moonpool area in a support frame of a suspended riser transfer device;
- displacing the support frame to pass underneath the mast, while the support frame supports the riser string, from the first moonpool area to the riser tensioning system at the second moonpool area; and
- attaching the riser string to the riser tensioner system.

7. An offshore drilling vessel comprising:

- a hull with a bow and a stern and a main deck therebetween, the main deck including a rear main deck portion and a front main deck portion;
- a moonpool extending through the hull;
- a firing line hoisting system mounted on the hull, comprising:
  - a drilling mast having a top side and a base mounted on the hull and extending over the moonpool;
  - a hoisting device supported by the mast at a front side thereof and having a load attachment device with a rotary drilling device which is displaceable along a firing line extending through a bow side of the moonpool to perform drilling activities;

  a drill pipe cassette storage provided on or below the rear main deck portion;

- a rail transportation system provided on the main deck, having one or more trolleys and one or more associated rails forming a longitudinal track extending in longitudinal direction of the main deck between the rear main deck portion and the front main deck portion and passing along a side of the moonpool and a lateral side of the hull of the vessel, the rail transportation system being configured to transport drill pipe cassettes from the drill pipe cassette storage provided on or below the rear main deck portion to the front main deck portion to be used for drilling activities at a front of the mast, and vice versa, as well as to and from an area near the moonpool and the mast; and
- a crane provided at the front main deck portion near an end of the one or more associated rails, the crane being configured to lift a drill pipe cassette from a trolley of the rail transportation system and place the trolley in a storage position near the bow side of the mast,
- wherein the drill pipe cassette is stored in a horizontal orientation.

8. The offshore drilling vessel according to claim 7, wherein the trolleys are wheeled trolleys with rail engaging wheels.

9. The offshore drilling vessel according to claim 8, further comprising a gantry crane extending over said track to handle items to be transported via said track.

10. The offshore drilling vessel according to claim 7, wherein a drilling equipment storage is provided at or below the rear main deck portion, and wherein the rail transportation system is adapted to transport drilling equipment.

11. The offshore drilling vessel according to claim 7, further comprising a catwalk machine arranged in longitudinal direction onto the front main deck portion to feed drill pipes into the firing line.

12. The offshore drilling vessel according to claim 11, further comprising a drill string manipulator, arranged at the front side of the mast to transfer drill pipes to and from the catwalk machine.

13. The offshore drilling vessel according to claim 7, wherein the vessel comprises a hold with vertically spaced floors for storage of cassettes of drill pipes, and an elevator is provided to transfer a cassette upwards to the rail transportation system.

14. The offshore drilling vessel according to claim 7, further comprising a drill string manipulator arranged at the bow side of the mast equipped with a rotary drilling drive to remove a drill string from a cassette in a horizontal orientation.