CLAIMS

1. A vessel (1) for storing and/or producing hydrocarbons comprising

- a deck (D) and a hull, wherein the hull further comprises a bow (2) having an upper part (3) and a lower part (4),

characterized in that the bow (2) further comprises

- a receiving structure (5) for connecting a buoyant turret buoy (6) to the bow (2), wherein the receiving structure (5) protrudes from the outer surface of the bow (2) in the vessel's (1) direction of travel, and wherein a minor part of the receiving structure (5) protrudes from the upper part (3) of the outer surface of the bow (2), while a main part of the receiving structure protrudes from the lower part (4) of the outer surface of the bow (2), and wherein the receiving structure (5) displays at least one cavity (8) located at a lower end (5b) of the receiving structure (5).

wherein an interface of the receiving structure (5) is complementary to an interface of a connecting section (17) of the buoyant turret buoy (6), and

wherein the upper part is above the water line (w) and the lower part (4) of the bow (2) is below the water line (w) during connection and/or disconnection of the buoyant turret buoy (6) at sea.

2. The vessel (1) according to claim 1, **characterized in that** at between 70% and 99.5% of the bulk of the receiving structure (5) protrudes from the lower part (4) of the outer surface of the bow (2) during connection and/or disconnection of the buoyant turret buoy (6).

3. The vessel (1) according to claim 1 or 2, **characterized in that** at the receiving structure (5) comprises an upper end (5a) and a lower end (5b), wherein the upper end (5a) is the above water line (w) during connection and/or disconnection of the buoyant turret buoy (6).

4. The vessel (1) according to any one of the preceding claims , **characterized in that** the receiving structure (5) displays a recess (7) directed towards the bow (2) for receiving at least a part of the buoyant turret buoy (6).

5. The vessel (1) according to claim 4, **characterized in that** the side walls of the recess (7) has a wedge shape in the direction towards the bow (2).

6. The vessel (1) according to claim 4 or 5, **characterized in that** the depth of the recess (7) in the direction towards the bow (2) is shallower at an upper end (5a) of the receiving structure (5) relative to a lower end (5b) of the receiving structure (5).

7. The vessel (1) according to any one of the preceding claims, **characterized in that** the receiving structure (5) further comprises a locking arrangement (9) situated at an upper end (5a) of the receiving structure (5) for reversibly locking the receiving structure (5) to the buoyant turret buoy (6).

8. The vessel (1) according to any one of the preceding claims, **characterized in that** the vessel (1) further comprises a rotary table (10) protruding from the upper part (3) of the bow (2).

9. The vessel (1) according to any one of the preceding claims, **characterized in that** the deck (D) further comprises a protruding deck structure (11) protruding from the bow (2) in the vessel's (1) direction of travel.

10. The vessel (1) according to any one of the preceding claims, **characterized in that** the vessel (1) further comprises a winch (12) for lifting the buoyant turret buoy (6) up to a position in which connection to the receiving structure (5) is feasible.

11. A buoyant turret buoy (6) for connection to a bow (2) of a vessel (1) according to any one of claims 1-10, comprising

- a buoyancy section (24) for making the buoyant turret buoy (6) neutrally or positively buoyant when submerged in a body of water and
- a turret shaft section (15) for guiding one or more risers (14) therein,

characterized in that the buoyant turret buoy (6) further comprises

- a connecting section (17) for connecting the buoyant turret buoy (6) to the receiving structure (5) of the bow (2) of the vessel (1), wherein an interface of the connecting section (17) is complementary to an interface of the receiving structure (5) and wherein the lower end (6b) of the connecting section (17) comprises at least one hook (17a), wherein at least one of the at least one hooks (17a) has a size and a position that renders possible insertion into the at least one cavity (8) located at the lower end (5b) of the receiving structure (5) of the vessel (1).

12. The buoyant turret buoy (6) according to claim 11, **characterized in that** the connecting section (17) of the buoyant turret buoy (6) is a radial extension being thinner at the upper end (6a) relative to the lower end (6b).

13. The buoyant turret buoy (6) according to any one of claims 11 or 12, **characterized in that** the connecting section (17) displays at least one incision (17b) at the upper end (6a).

14. The buoyant turret buoy (6) according to anyone of claims 11-13, **characterized in that** the upper end (6a) of the connection section (17) comprises an attaching

arrangement (23) for locking the buoyant turret buoy (6) to locking arrangement (9) of the receiving structure (5) of the vessel (1).

15. The buoyant turret buoy (6) according to anyone of claims 11-14, **characterized in that** the turret shaft section (15) comprises a vertically extending channel (15a) enabling guiding of one or more risers (14) vertically therein.

16. A mooring arrangement for mooring a vessel (1) to a sea bed, **characterized in that** it comprises a vessel (1) in accordance with any one of claims 1-10 connected to a buoyant turret buoy (6) in accordance with any one of claims 11-15, and wherein the buoyant turret buoy (6) further comprises mooring lines (13) at a lower section (16) of the turret shaft (15).

17. The mooring arrangement according to claim 16, **characterized in that** the vessel (1) further comprises a winch (12) having a lifting capacity being higher than the weight of necessary for lifting at least a part of the submerged buoyant turret buoy (6) to a height above the water line (w).

18. A method for connecting a buoyant turret buoy (6) according to any one of claims 11-15 located at sea to a receiving structure of a bow (2) of a vessel (1) according to any one of claims 1-10,
wherein the method comprising the steps of:

a) connecting a winch wire (18) hanging from a winch (12) fixed to the vessel (1) to a pick-up assembly (19) connected to the buoyant turret buoy (6) floating at or below the water line (w) of a body of water,

b) lifting the buoyant turret buoy (6) by the winch (12) until the connecting section (17) of the buoyant turret buoy (6) is in a position where the upper end (6a) of the connecting section (17) is in line with, or near in line with, an upper end (5a) of the receiving structure (5), and

c) locking the buoyant turret buoy (6) to the receiving structure (5) by utilizing at least one locking arrangement (9) fixed to the upper end (5a) of the receiving structure (5) and at least one attaching arrangement (23) fixed to the upper end (6a) of the buoyant turret buoy (6).

19. The method according to claim 18, **characterized by** further comprising the following steps to tighten the mooring lines (13) of the buoyant turret buoy (6):

d) connecting the winch wire (18) to the mooring line (13),

e) pulling the mooring line (13) through a mooring line connection (13a) and a mooring line stopper (13b), until the mooring line (13) is tightened,

f) removing the part of the mooring line (13) which has passed through the mooring line stopper (13b) and the mooring line connection (13a),

g) repeating steps d) to f) for all the mooring lines (13).

20. The method according to claim 19, **characterized by** further comprising the following steps:

h) connecting the winch wire (18) to a lifting and toque section (20) attached to the vertically extending channel (15a) within or above the upper end of the turret shaft section (15) of the buoyant turret buoy (6), wherein the buoyant turret buoy (6) comprises at least one riser (14) attached to a lifting and torque section (20),

i) lifting the vertically extending channel (15a) comprising the lifting and toque section (20) and the at least one riser (14) through a rotary table (10) protruding from the upper part (3) of the bow (2) using the winch (12),

j) attaching the lifting and torque section (20) to a hang off structure (22) on or above the rotary table (10), and

k) connecting a swivel arrangement (21) to the at least one riser (14).

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