CLAIMS

1. Floating and manoeuvrable hull washing and cleaning plant (22) for ships, including cleaning and washing means (5) submerged below the water level (L) and operating against the hull; propulsion members (13, 14) for moving the plant in the engagement and washing against the hull in its length; members for controlling and changing the buoyancy displacement of the plant with control of the immersion level; the structure of the plant also includes a basin (2) with side walls (3) within which the cleaning and washing means are positioned; characterized in that it has the cleaning and washing means (5) arranged in said basin e brought into contact with the hull (22) during the cleaning with the control of the plant floating and of the position of support members (8, 9) of the cleaning and washing means with respect to the basin itself; guiding members (16) for engaging and positioning the ship during the treatment; the cleaning and washing means are moved along the hull being treated with the displacement of the basin; the cleaning and washing means operate simultaneously on the section of the hull covered by the length of the side walls (3); the basin (2) has a more extended (23) floor (4) of a dock at the bow and at the stern of the side walls length to house the control members of the displacement of the floating plant (1) itself.

2. Floating plant, according to claim 1, wherein the cleaning and washing means (5) are associated with water suction members (29), placed in the side walls (3) and in the floor (4) of the dock between the walls, to collect the wastewater coming from the washing and the dirt removed from the hull (22).

3. Floating plant, according to claim 2, wherein the suction members (29) are connected to a filtration apparatus before the evacuation of the purified water; the filtered material is periodically evacuated from the plant in an ecologically controlled manner.

4. Floating plant, according to claim 1, 2 or 3, wherein at the ends

of the side walls (3) flexible and inflatable bulkheads (25) are made in the upper edge (26) to adhere to the hull (22) during the treatment.

5. Floating plant, according to claim 4, wherein the flexible and inflatable bulkheads (25) have an inflatable upper edge (26) equipped with rollers (28) for sliding the flexible and inflatable bulkhead when placed in contact with the hull (22) of the treated ship.

6. Floating plant, according to claim 1, wherein the propulsion members (13, 14) for the manoeuvre of the floating plant (1) are positioned on the most extended parts (23) of the floor (4) of the dock at the bow and at the stern.

7. Floating plant, according to claim 1, wherein the cleaning and washing means (5) consist of rotating brushes (6, 27) having a horizontal axis which is longitudinal to the axis (A) of the floating plant (1).

8. Floating plant, according to claim 1, wherein the cleaning and washing means (5) consist of multiple belts (7) with pressurized water jets oriented towards the surface of the hull (22) being treated.

9. Floating plant, according to claim 1, wherein the propulsion, pumping and moving members of the floating plant and the service member of the floating plant are driven by electric transmission powered by hybrid power, electric power of the batteries aboard the floating plant (1) and by a backup and/or battery charging electric generator.

10. Floating plant, according to claim 9, wherein the landing of one or more floating plants (1) is carried out on a pier (37) in the shallow seabed roadstead or sea area (38) suitable for the hull cleaning and washing treatment for ships (21) and wherein the electric supply for charging batteries originates from onshore or offshore electric power generation plants.

11. Floating plant, according to claim 1, wherein the positioning members comprise lateral pushers (17), protruding towards the centre of the basin (2) with arms provided with rollers (19) in contact with the walls (20) of the ship engaged during the treatment.

12. Floating plant, according to claim 1, wherein the guiding means for engaging the ship comprise lateral supports (16) at the level of water for guiding the framework, which are aligned so as to converge with the longitudinal axis (A) of the plant (1).

13. Floating plant (1), according to one of the preceding claims, wherein the operations for displacing the plant and its constant control; engaging and disengaging the hull of the ship (21) with approach (30) and alignment manoeuvre with continuous control of the centering of the hull (22); cleaning treatment operation (31) of the hull with continuous command and control of the cleaning and washing means (5) including the adjustment of the position of the means themselves in the treatment basin (2) between the side walls (3) and on the floor (4) of the dock; storing the cleaning and washing service data of the hull in the control of the plant movement and the plant internal parts; are carried out by a command and control process of the floating and manoeuvrable plant (1), for each hull of a ship treated to form a database so as to allow, in carrying out repeated cleaning and washing services over time, the semi-automatically or automatically treatment operation.