

PATENT SPECIFICATION

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DRAWINGS ATTACHED



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COMPLETE SPECIFICATION

Arrangement for Cleaning a Ship's Hull of Marine Growth

I, JAN VADSETH, Subject of the Kingdom of Norway, residing at Kr. Märthas plass 1, Oslo 1, Norway, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to a device for cleaning a ship's hull of marine growth, which device is mounted on an auxiliary craft and comprises an elongated cylindrical brush supported in substantially vertical position and arranged to be rotated by a motor.

The object of the invention is to provide such a device which is simple and robust and which gives an effective cleaning of the ship's sides and bottom, so that marine growth is removed from these surfaces.

The invention consists in an arrangement for cleaning a ship's hull of marine growth which consists of a device mounted on an auxiliary craft and comprising an elongated, cylindrical brush supported in substantially vertical position and rotatable by means of a motor, characterized by that the brush is supported at its upper end for free pendulum movement, hanging down in the water from the auxiliary craft and arranged to be kept against the side of the ship to be cleaned by reduced static pressure caused by high velocity currents in the water between the ship's side and the brush induced by the rotation of the brush.

In this connection it should be mentioned that it is known to have rotatable brush members supported from an auxiliary craft and intended for the cleaning of a ship's sides. Such known devices have, however, been complicated, have not given an effective cleaning due to the fact that it has been difficult to keep the brushes effectively against the ship's side, and further have needed too long a time for the cleaning work, i.e. have had too small a capacity. The brush according to the invention eliminates, however, the drawbacks of previously known arrangements by being certainly

and effectively kept against the ship's side or bottom by virtue of the special support according to the invention. The brush arrangement also has a very high capacity.

To provide a better understanding of the invention it will now be described with reference to the accompanying drawing, where:

Figure 1 is a schematic elevation of the device, and

Figure 2 shows the same arrangement seen in plan.

In the embodiment disclosed in the drawing the device is carried by an auxiliary craft 1 which initially by its own propeller force and/or with the assistance of a hawser 3 and supporting wheel 4 can be moved at a desired speed along the side of the ship 2 which is to be cleaned. A rather long cylindrical brush 5 for instance of plastics material is supported below a motor 6 freely pivoted at the bow of the auxiliary craft by means of a cardan type suspension 7 or other suitable means. The brush is thus freely suspended for rocking about the pivot axis and the motor. As the brush 5 is rotated, it induces a flow of water between itself and the ship's side, and this is at a comparatively high velocity in the restrictive space available. Consequently, there is a fall in static pressure in the zone of contact and this causes the brush to be pressed against the ship's side.

At the lower end of the brush 5 there is attached a swingable second brush 11 which can be rotated by means of a hydraulic motor 12 and can be swung by means of a servomotor 13. At the end of the second brush 11 there is arranged a buoyancy container 14 which via air hoses communicates with an air-pressure source on board the auxiliary craft and which can be filled with water or air as desired.

An inspection platform 15 for a frogman is arranged between the two brushes. This platform may be used for the support of a remote controlled TV-camera.

When the cleaning device is not in use, the

brushes can be lifted out of the water and secured to the side of the auxiliary craft.

- 5 More than one brush may be arranged for the extension of the first brush. The second brush preferably can be adjusted for parallel contact against the ship's side by arranging the first brush to be telescopically adjustable as to length.

WHAT I CLAIM IS:—

- 10 1. An arrangement for cleaning a ship's hull of marine growth which consists of a device mounted on an auxiliary craft and comprising an elongated, cylindrical brush supported in substantially vertical position and rotatable by
15 means of a motor, characterized by that the brush is supported at its upper end for free pendulum movement, hanging down in the water from the auxiliary craft and arranged to be kept against the side of the ship to be
20 cleaned by reduced static pressure caused by high velocity currents in the water between the ship's side and the brush induced by the rotation of the brush.

- 25 2. An arrangement according to claim 1, characterised in that the brush is suspended from the bow of the auxiliary craft.

3. An arrangement according to claim 1, characterised in that the auxiliary craft is pro-

vided with supporting rollers or the like for abutment against the ship's side.

4. An arrangement according to any of the preceding claims, characterized in that the brush is extended at its lower end by one or more further brushes, the axis or axes of which are angularly adjustable in relation to the axis of the first brush.

5. An arrangement according to claim 4, characterized in that the second brush is adjustable to parallel contact against the ship's side by telescopic length adjustment of the first brush.

6. An arrangement according to claim 4 or 5, characterized in that said second brush has a buoyancy container arranged at its lower free end.

7. An arrangement according to claim 6, characterized by that the container is connected to a source of compressed air and can be filled with air or water as desired.

8. An arrangement for cleaning of a ship's hull of marine growth substantially as hereinbefore described with reference to the accompanying drawing.

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