No. 634,329. Patented Oct. 3, 1899.

W. P. FREEMAN.

DIVER'S STAGE FOR CLEANING SHIPS' HULLS.

(Application filed Aug. 19, 1898.)

(No Model.)

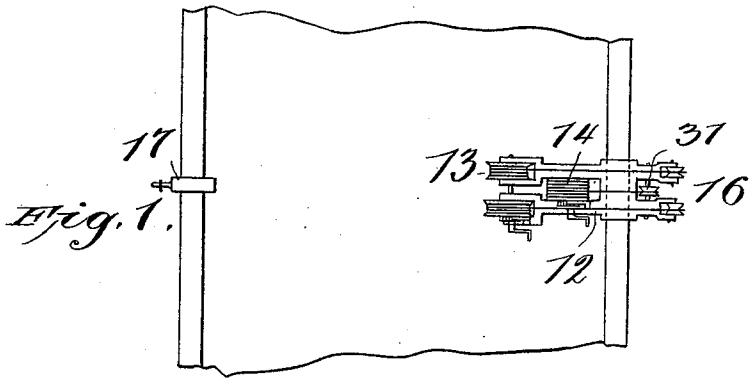


Fig. 1.

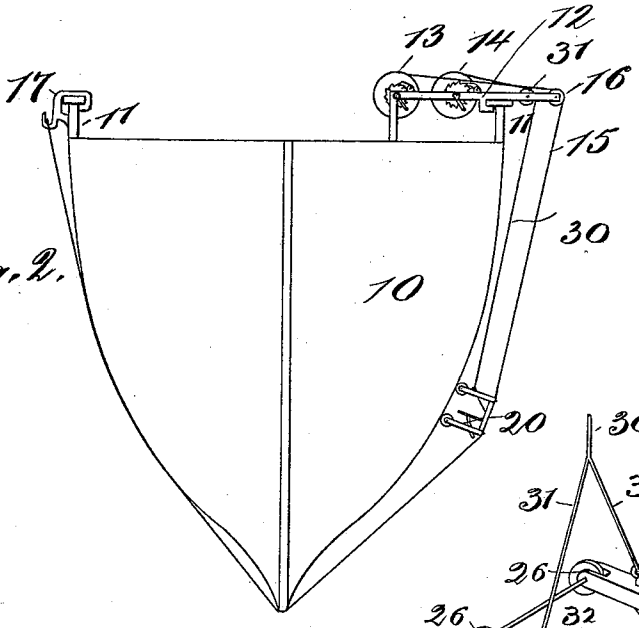


Fig. 2.

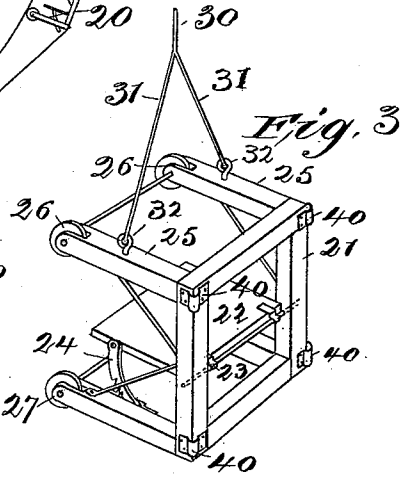


Fig. 3

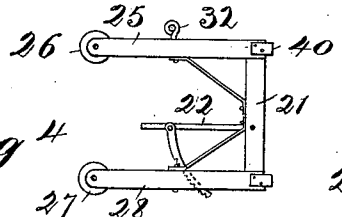


Fig. 4

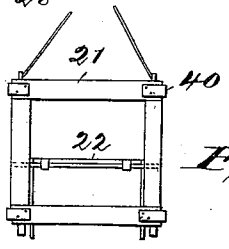


Fig. 5.

WITNESSES

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DIVER'S STAGE FOR CLEANING SHIPS' HULLS.

SPECIFICATION forming part of Letters Patent No. 634,329, dated October 3, 1899.

Application filed August 19, 1898. Serial No. 688,980. (No model.)

To all whom it may concern:

Be it known that I, WARREN P. FREEMAN, of the city of New York and State of New York, have invented certain new and useful Improvements in Ships' Implements, of which the following is a description, referring to the accompanying drawings, which form a part of this specification.

The object of the invention is to conveniently support an operator for operating upon the exterior of the hulls of vessels whether in dry-dock or afloat.

The invention includes a seat for the operator, means for securing the seat adjustably against the side of the vessel, and means for adjusting the seat.

Certain other features of the invention will be understood from the following description and accompanying drawings.

In the drawings, Figure 1 is a plan view of portions of the apparatus secured to the rails of the ship, a portion only of the ship being shown. Fig. 2 is an elevation looking fore and aft and showing the invention applied to a ship's hull. Fig. 3 is a perspective of the chair or support; and Figs. 4 and 5, a side elevation and a rear elevation, respectively.

Throughout the drawings similar reference-numerals refer to similar parts.

The ship's hull and rails are indicated at 10 and 11, respectively. In the vicinity of one of the rails, and preferably adjustably secured to it, is a frame 12, carrying two winches 13 and 14. From the winch 13 a rope 15 extends over the pulley 16 to meet the hull of the vessel and is secured to a suitable fixture 17 on the inside of the rail or opposite side of the vessel. This rope 15 serves as means for holding the operator's chair 20 against the side of the vessel. The rope 15 is adjusted, if the ship is afloat, by sinking it in front of the bow of the vessel and then allowing it to drift or be drawn aft to any position desired, whereupon the operator's chair 20 may be let down between the rope 15 and the side of the vessel, any suitable tension being applied by the winch 13 to hold the chair 20 firmly against the vessel. A rope 30, secured to the chair 20, passes over the pulley 31 and is wound upon the winch 14. By means of this the chair may be drawn up or let down in obedience to signals received from the operator in the chair. Preferably instead of a single rope 15 a number of ropes will be used, running over a number of pulleys 16, as indicated in the plan view of Fig. 1.

I will now describe the details of the chair or seat for the operator. A frame 21 supports the seat proper, 22, which is adjustable on the hinges 23 and held in any position of adjustment by means of the tooth-segment 24. The frame 21 forms virtually a back and arms for the seat 22. The portions of the frame forming the arms are marked 25. At the forward ends of these are provided rollers 26, and a similar set of rollers 27 is provided upon the end pieces 28 at the bottom of the chair. The ropes 15 run through guides 40, of which there are preferably four, as shown. The rope 30 terminates in two ropes or supports 31, which are secured to eyes 32 at each side of the chair. This gives great freedom of movement for the head of the operator when seated in the chair.

It will be seen that as the chair 20 is raised or lowered along the curving sides of a ship the ropes 15 must be adjusted from time to time in accordance with the varying position of the chair 20 in order to hold it against the side of the ship. As the chair descends toward the bottom of the ship the seat 22 may be adjusted by means of the tooth-segment 24, so as to permit the occupant to sit in the easiest position. When the chair is used for cleaning the sides and bottom of a ship's hull and a diver is sent down in the chair, so as to obviate the necessity of dry-docking the ship, the diver can clean from the deck-line to the keel by having the chair 20 adjusted along the ropes 15. When he has thus cleaned the strip of surface from the deck-line to the keel the chair may be drawn up and the ropes 15 loosened and drawn along to a position that will permit the diver to clean the adjacent surface. In this way, step by step, the vessel may be cleaned from end to end without the use of a dry-dock. For repairs also the chair is of great use whether the vessel be afloat or in a dry-dock.

I do not of course wish to limit myself to

details and forms or parts shown in the accompanying drawings, as these may be widely varied without departing from the principles of my invention.

The novel features and combinations of features which I claim as new, and desire to secure by these Letters Patent, are pointed out and enumerated in the following claim:

In combination, a frame provided with a plurality of winches, a chair, a rope 30 operated by one of said winches and attached to said chair, and one or more ropes 15 extending through guides on said chair and operated by one or more of said winches, substantially as set forth.

Signed this 15th day of August, 1898, at New York, N. Y.

WARREN P. FREEMAN.

Witnesses:
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