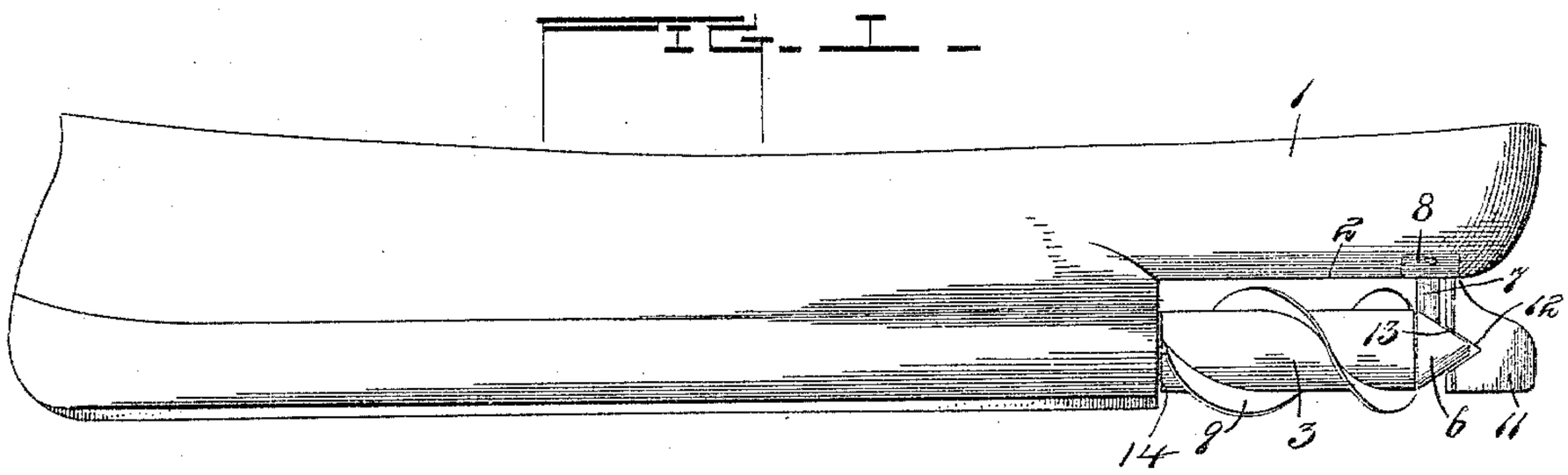
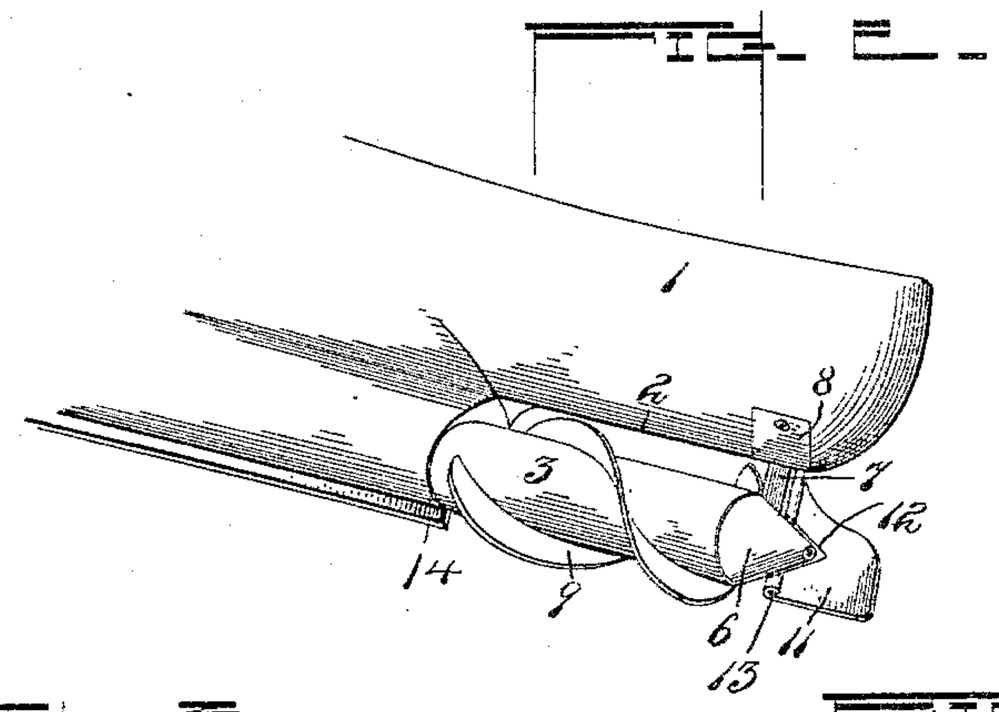
(No Model.)

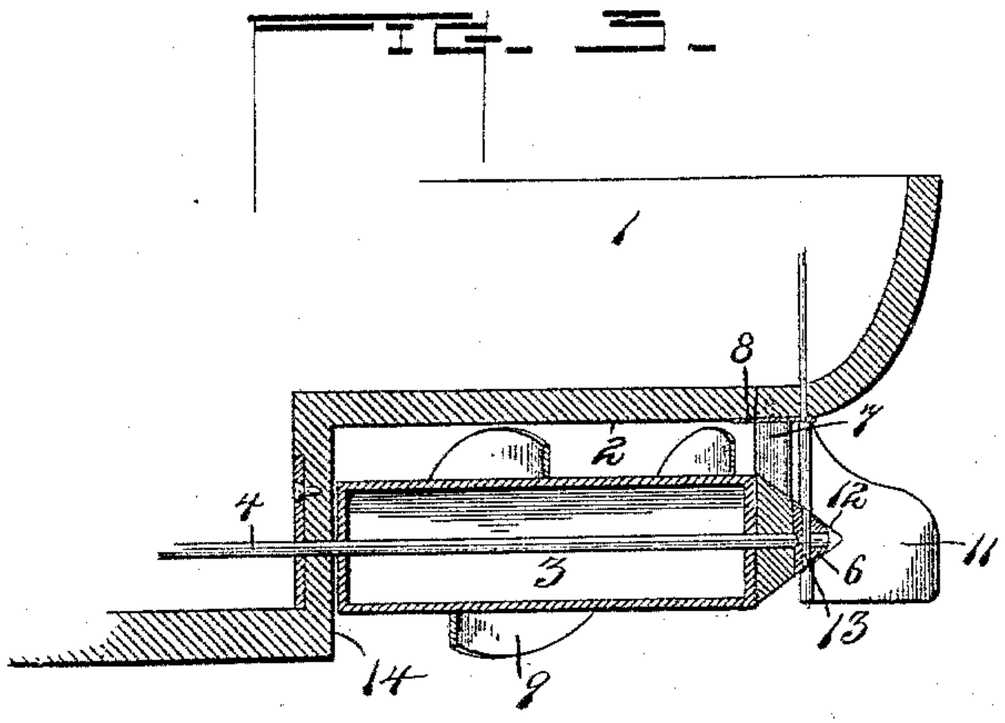
A. H. CARPENTER.

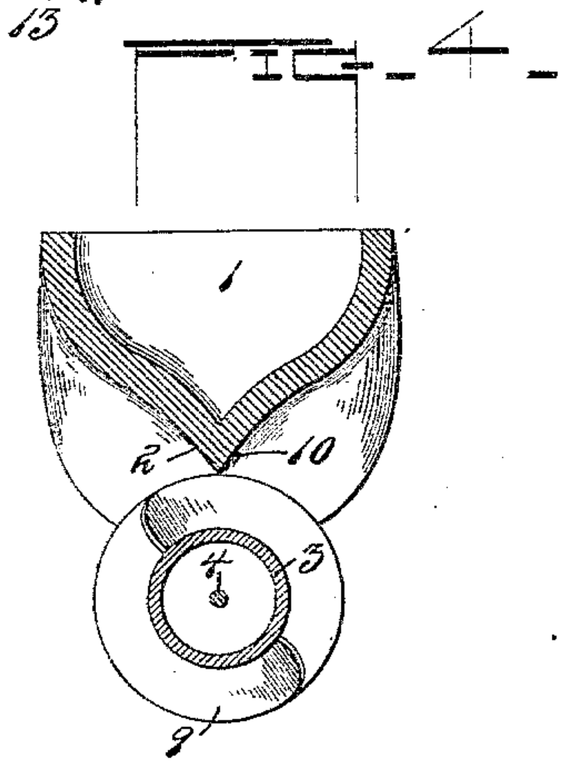
SCREW PROPELLER.

No. 597,632. Patented Jan. 18, 1898.









Inventor

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UNITED STATES PATENT OFFICE.

AMOS H. CARPENTER, OF STOCKTON, CALIFORNIA.

SCREW-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 597,632, dated January 18, 1898.

Application filed October 16, 1896. Serial No. 609,076. (No model.)

To all whom it may concern:

Be it known that I, AMOS H. CARPENTER, a citizen of the United States, residing at Stockton, in the county of San Joaquin and State of California, have invented a new and useful Screw-Propeller, of which the following is a specification.

This invention relates to screw-propellers, and has for its object to provide, in connection with a boat or vessel having a hull of special form, a buoyant propeller in the form of a hollow cylinder with closed ends, having one or more spiral flanges extending continuously from end to end thereof. The hull is shaped so as to form a guard for the front end of the propeller, while the rear end of the propeller is journaled in a rearwardly tapering and pointed conical bearing supported beneath the hull's counter.

Other objects and advantages of the invention will appear in the course of the subjoined description.

The invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a vessel's hull, showing the improved propeller and its relation thereto. Fig. 2 is an enlarged perspective view of the propeller, rudder, &c., and the contiguous portions of the hull. Fig. 3 is a longitudinal section through the same. Fig. 4 is a cross-section thereof.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the drawings, 1 designates a vessel's hull, which in the main may be of any usual or preferred construction. For the purpose of carrying out the present invention the stern of the hull is cut away rectangularly to form a substantially horizontal counter 2 and a vertical end wall 14, beneath which counter 2 the propeller 3 is journaled, the axis of rotation of the propeller being parallel with said counter and its forward end immediately in the rear of the vertical wall 14.

The propeller consists of a hollow cylinder 3, closed at each end and rigidly mounted on a shaft 4, which passes through the stern of the boat into the interior, where it may be operatively connected to any suitable motor. (Not shown.) The shaft 4 projects beyond the cylinder at its rear end and enters a tapering and rearwardly-pointed cone-shaped bearing 6, mounted rigidly on the lower end of a post 7, which is connected at its upper end by means of a cap-plate 8 to the counter 2. The cylinder 3 is provided exteriorly with one or more flanges 9, extending spirally around the same and from end to end thereof, said flanges serving as a continuous screw for catching the water and propelling the boat forward or backward, according to the direction in which the propeller is revolved by the motor. That portion of the hull of the vessel extending forwardly from the vertical wall 14 is shaped on its opposite sides immediately in front of the cylinder 3 to correspond in outline with and form a flush continuation of the surface of the cylinder and the vertical wall 14 at this point, and thereby forms a water-guard which protects and covers the front end of the cylinder and prevents the water from striking against the same and impeding the progress of the vessel, while at the same time the water passes freely to the spiral flanges or blades 9, which are thus enabled to take a firm hold thereon. The forward surface of the conical bearing 6 also corresponds exactly with the rear end of the cylinder, and the water thus passes freely off the rear end of the cylinder and slides easily from the point of said conical bearing, and thus no obstruction or suction is produced which would interfere with the rapid progress of the vessel.

By reference to the cross-sectional view it will be seen that the counter is brought to a longitudinal depending ridge 10 just over and in vertical alinement with the axis of the propeller. A substantially V shape is thus given to the rear portion of the hull, which admits of the water freeing itself the more easily from the hull when agitated by the propeller. The post 7 is brought to a sharp edge at its front, so as to cut the water and afford less obstruction to the progress of the boat.

11 designates the rudder, which is arranged in rear of the post 7 and provided with a V-shaped cut-out 12, so as to straddle the conical bearing 6 at its rear end. The rudder 11

is connected above and beneath the bearing 6 to the rudder post or shaft 13, which passes through and has a bearing in the cone 6, the upper end of said shaft extending through the hull of the vessel and inside thereof, where it is connected to any suitable steering mechanism.

From the foregoing description it will be seen that a very simple and effective screw-propeller is provided and that the same is submerged and so mounted beneath the hull of the vessel that it affords no obstruction whatever to the forward or backward movement of the vessel, and as the propeller is not inclosed the water can pass freely to the spiral blades from all directions.

The hollow cylinder of the propeller is made air-tight and by its buoyancy serves to compensate for the loss of buoyancy resulting from the cutting away of the rear portion of the hull.

It will be understood that more than one of the propellers above described may be used where the hull has considerable beam and that the length of the propeller may be varied to suit the size of the vessel and other requirements. It will also be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

1. The combination with a vessel's hull having its stern cut away as described, of a submerged screw-propeller journaled beneath the counter on a longitudinal axis and consisting of a hollow cylindrical body and one or more spiral blades or flanges extending around the same continuously from end to end, a rearwardly-tapering conical bearing for the rear end of said propeller, a post or upright securing said bearing to the hull, said post being brought to a sharp edge at its front, a rudder post or shaft passing through and journaled in said conical bearing, and a rudder-blade having a V-shaped cut-out to embrace the pointed end of said conical bearing and secured to said rudder post or shaft above and beneath the conical bearing, substantially as described.

2. The combination with a vessel's hull having its rear portion cut out to form a vertical end wall, and a substantially horizontal counter extending rearwardly from said wall, the counter being practically V-shaped in cross-section, of a submerged screw-propeller consisting of a hollow cylinder arranged beneath the counter and journaled on an axis parallel therewith, with its front end in close proximity with the vertical wall, and one or more spiral blades or flanges extending around the cylinder from end to end, the surface of the hull immediately in front of the cylinder being so bulged outwardly on its opposite sides as to form a flush continuation of the surface of the cylinder extending forwardly to the bow, whereby the vertical wall forms a water-guard for the end of the cylinder but presents no obstruction between the water and the propeller-blades, the construction being such that the water can pass freely from all directions to the propeller-blades, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

AMOS H. CARPENTER.

Witnesses:
T. G. ELLIOTT,
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