L. C. & G. F. CARY.

Screw-Propellers.

No. 166,498. Patented Aug. 10, 1875.

Fig. 1

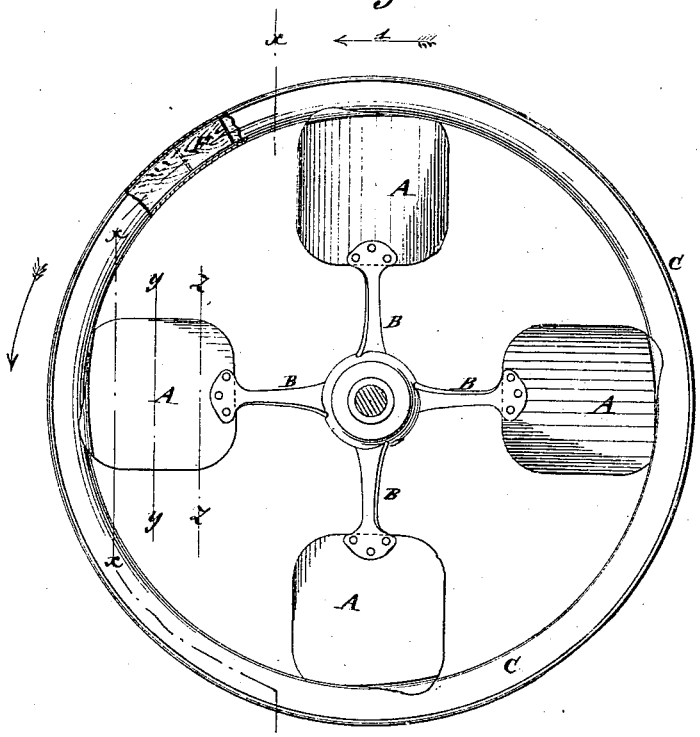


Fig. 2

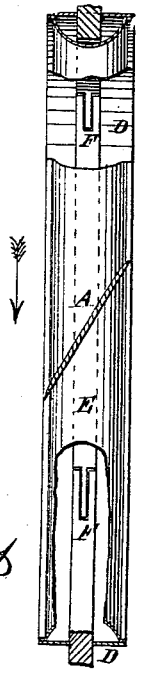


Fig. 3

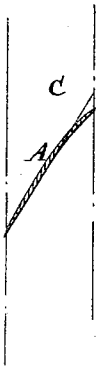
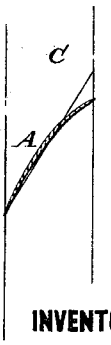


Fig. 4



WITNESSES:

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UNITED STATES PATENT OFFICE.

LEWIS C. CARY AND GEORGE F. CARY, OF PORTLAND, MAINE.

IMPROVEMENT IN SCREW-PROPELLERS.

Specification forming part of Letters Patent No. **166,498**, dated August 10, 1875; application filed May 1, 1875.

To all whom it may concern:

Be it known that we, LEWIS CLARK CARY and GEORGE FRANCIS CARY, of Portland, in the county of Cumberland and State of Maine, have invented a new and Improved Screw-Propeller, of which the following is a specification:

The invention will first be described in connection with drawing, and then pointed out in the claims.

Figure 1 is a side elevation of our improved propeller with a part in section. Fig. 2 is a section taken on the line *x x*. Fig. 3 is a section on line *y y*, and Fig. 4 is a section on line *z z*.

Similar letters of reference indicate corresponding parts.

A represents the blades, which are in length equal to about half the radius of the wheel, and of uniform breadth, being connected at the inner end to the short arms B, and at the outer end to the guard-ring C. They are molded in concave form at the inner end on the side acting against the water, and for some distance toward the outer end, but at the middle or thereabout they assume the flat form which they retain to the outer end, where they are attached to the rim C. This rim is composed of an outer flat band, D, the inner half-round band E, and a stiffening-rib, F, of wood or other material, within the hollow space formed by the half-round band. The two metal bands or rings are designed to be made water-tight to make the ring buoyant for lessening the friction on the bearings of the shaft. The concave form of the inner portion of the buckets is calculated to have a better effect in setting the water in motion than the flat form, but when so set in motion the flat form of the outer portion is believed to give better results than the concave form. The open space around the hub afforded by the short blades and small attaching arms improves the efficiency of the wheel by the greater clearance afforded for the water, which does not give beneficial results on the center portion of the blades when they extend thereto. This protecting and buoying ring is applicable to wheels of any form, and may be applied readily to those in use.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination of a hollow water-tight protecting-rim with the blades of a propeller, substantially as specified.

2. The protecting-rim, constructed of the flat band D, oval or half-round band E, and the stiffening-rim F, substantially as specified.

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Witnesses:
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