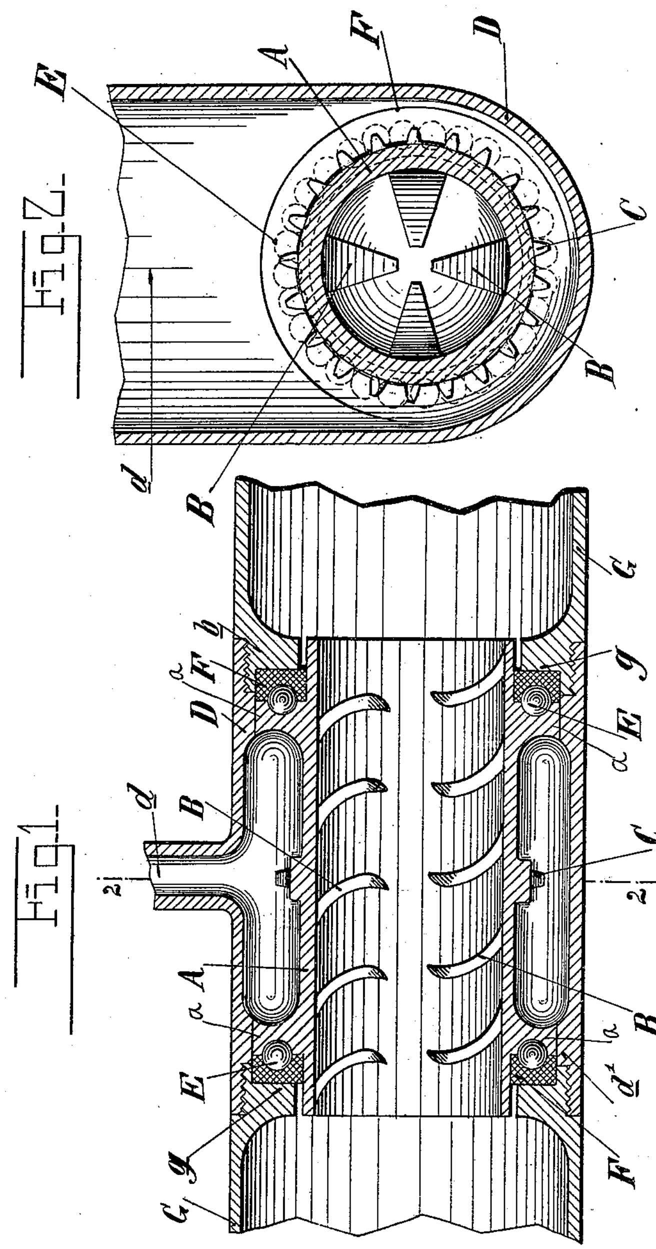
No. 649,065. Patented May 8, 1900.

D. G. MARTENS.

PROPELLER FOR SHIPS.

(Application filed Jan. 22, 1900.)

(No Model.)



Witnesses
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[illegible]

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UNITED STATES PATENT OFFICE.

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PROPELLER FOR SHIPS.

SPECIFICATION forming part of Letters Patent No. 649,065, dated May 8, 1900.

Application filed January 22, 1900. Serial No. 2,412. (No model.)

To all whom it may concern:

Be it known that I, DANIEL GEORGE MARTENS, a subject of the King of Sweden and Norway, and a resident of Christiania, Norway, at present residing at 12 Montague Place, Russell Square, London, England, have invented certain new and useful Improvements in Propellers for Ships and other Vessels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

With screw-propellers fixed on a rotary shaft as ordinarily constructed the water is thrown to the side at the same time that the propeller is advancing through the water, and this lateral displacement of the water increases with the number of revolutions of the propeller and results in a considerable loss of the propulsive power.

The object of this invention is to construct propellers by which the lateral displacement of the water is prevented.

To effect my object, I form upon or secure to the interior of a cylinder or tube a propeller thread or threads of any suitable pitch and dimensions. This cylinder or tube, which may be of any suitable length, I mount on ball-bearings and provide means, preferably by chains and sprocket-wheels, for rotating it.

In the accompanying drawings, Figure 1 is a longitudinal section, and Fig. 2 is a transverse section taken on the line 2 2 of Fig. 1, showing one way in which my invention may be carried into practical effect.

The same parts are lettered to correspond in the two figures.

A is a cylinder or tube of any suitable length and diameter having a propeller-blade or propeller-blades B secured to, cast on, or otherwise formed integrally with the interior of the said cylinder or tube. The propeller blade or blades B may be of any suitable pitch and dimensions and secured only at the outer periphery to the cylinder or tube A, the inner end or ends or roots of the blades being free, thus affording a central passage or way through the interior of the cylinder or tube A, as shown in the drawings.

The cylinder or tube A is mounted on ball-bearings and in the example shown is fitted with a sprocket-wheel C, whereby it may be rotated by a chain passing through the way *d* in the outer tube D. The propeller cylinder or tube A is provided with end flanges *a*, having circular grooves therein to act as races for the balls E. The other part of each ball-race is formed in a block F, which blocks are secured in proper position by flanges *g* on end tubes G, which are screwed or otherwise rigidly secured to the ends of the outer tube D. This outer tube D is provided with interior flanges *d'*, which abut on the interior of the circular flanges *a* on the propeller cylinder or tube A and make a joint therewith. Rings or washers or other packing may be interposed between any of the parts to make a water-tight joint, if desired.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A propeller for ships and other vessels consisting of a cylinder or tube mounted in suitable bearings, a propeller blade or blades secured to or formed on the interior of said cylinder or tube, and means for rotating the said cylinder or tube in its bearings, substantially as described.

2. A propeller for ships and other vessels consisting of a cylinder or tube mounted on ball-bearings in an outer tube, a propeller blade or blades secured to or formed on the interior of said cylinder or tube, and means for rotating the said cylinder or tube on the ball-bearings within the outer tube, substantially as described.

3. A propeller for ships and other vessels consisting of a cylinder or tube mounted in suitable bearings, a propeller blade or blades secured to or formed on the interior of said cylinder or tube, and means secured to the exterior of said cylinder or tube for rotating it in its bearings, substantially as described.

4. A propeller for ships and other vessels consisting of a cylinder or tube mounted on ball-bearings in an outer tube, a propeller blade or blades secured to or formed on the interior of said cylinder or tube, and means

secured to the exterior of said cylinder or tube for rotating it on the ball-bearings within the outer tube, substantially as described.

5. A propeller for ships and other vessels consisting of a cylinder or tube mounted on ball-bearings in an outer tube, a propeller blade or blades secured to or formed on the interior of said cylinder or tube, a sprocket or toothed wheel fast on the exterior of said cylinder or tube for rotating it on the ball-bearings within the outer tube, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL GEORGE MARTENS.

Witnesses:

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FRED C. HARRIS.