No. 785,369. PATENTED MAR. 21, 1905.

E. G. MEINECKE.

PROPELLER.

APPLICATION FILED MAY 23, 1904.

FIG. 1.

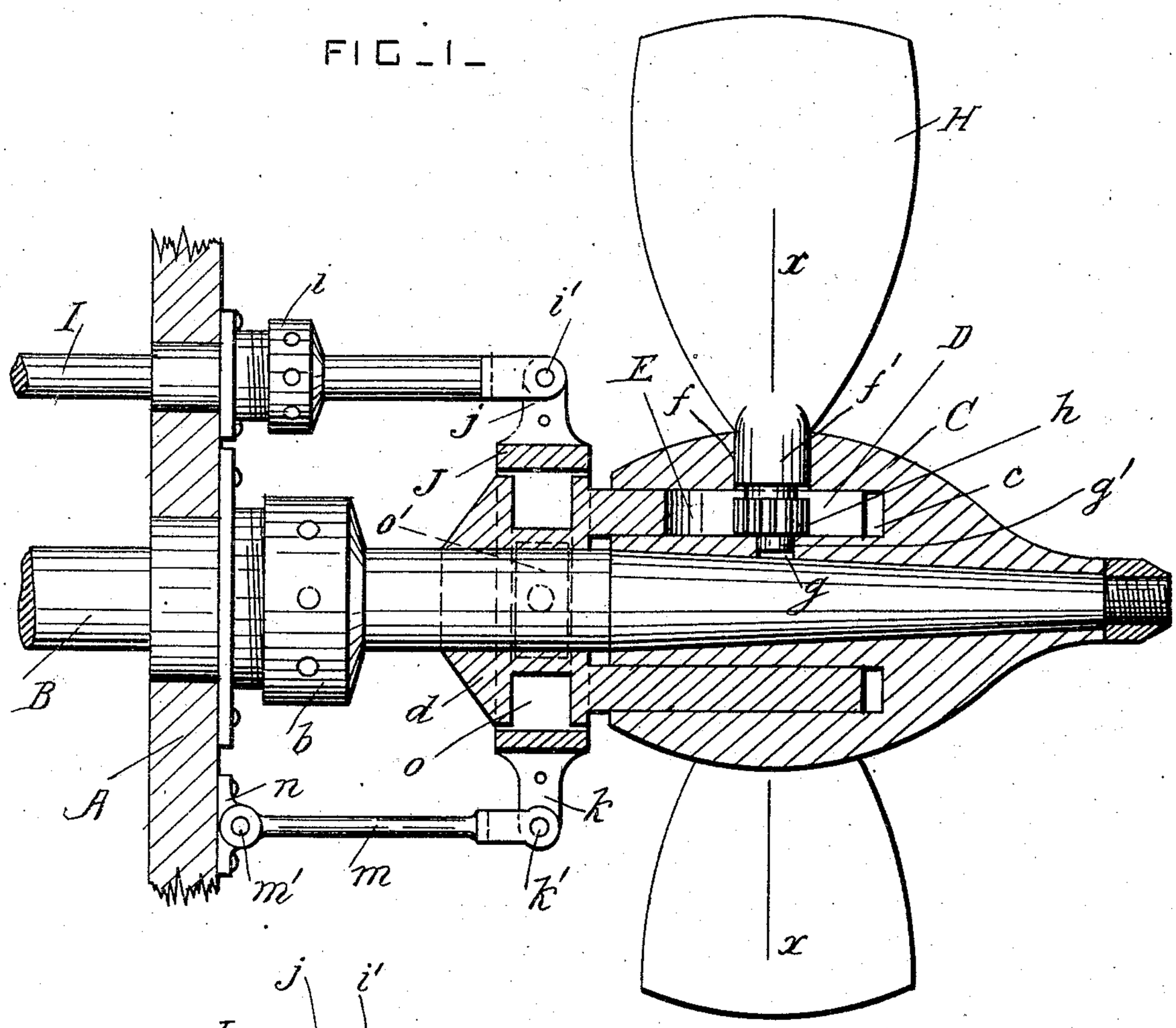


FIG. 2.

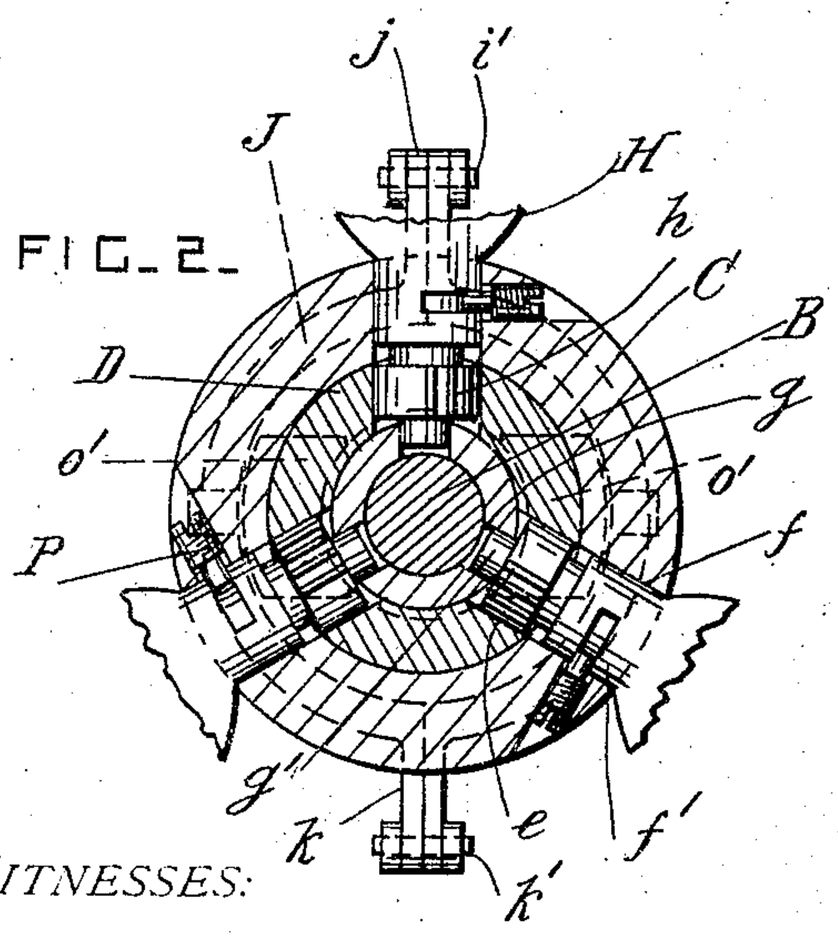
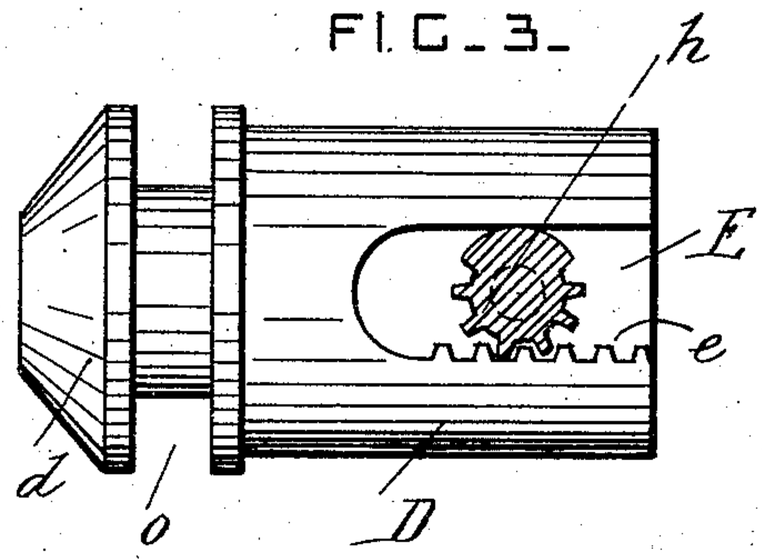


FIG. 3.



WITNESSES:

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No. 785,369. Patented March 21, 1905.

UNITED STATES PATENT OFFICE.

EDWARD G. MEINECKE, OF ALAMEDA, CALIFORNIA.

PROPELLER.

SPECIFICATION forming part of Letters Patent No. 785,369, dated March 21, 1905.

Application filed May 23, 1904. Serial No. 209,208.

To all whom it may concern:

Be it known that I, EDWARD G. MEINECKE, a citizen of the United States, residing at Alameda, in the county of Alameda and State of California, have invented certain new and useful Improvements in Propellers; 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.

This invention relates to propellers for boats and launches; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed, whereby the blades of the propeller are reversed, so as to propel the boat or launch in the reverse direction.

In the drawings, Figure 1 is a longitudinal section through a propeller constructed according to this invention. Fig. 2 is a cross-section taken on the line *x x* in Fig. 1. Fig. 3 is a detail side view of the reversing-sleeve.

A is a portion of a boat, launch, or other floating object to which the propeller is attached.

B is the propeller-shaft, which passes through a stuffing-box *b* of approved construction in the stern of the boat A.

C is the hub of the propeller, which is rigidly secured on the projecting end portion of the shaft B in any approved manner. The hub C is provided with an annular chamber *c*, which is opened at the end nearest the stuffing-box.

D is the reversing-sleeve, which is slidable longitudinally in the annular chamber *c* and which is provided with a hub *d*, which is mounted on the shaft B between the hub C and the stuffing-box. The reversing-sleeve is provided with a series of longitudinal slots E, and *e* represents toothed racks on one side of each of the said slots. The propeller-hub has also radial holes *f* and *g*. The holes *f* are in the outer part of the hub, and the holes *g* are smaller in diameter than the holes *f* and are arranged in line with them in the inner part of the hub next to the propeller-shaft.

H represents the blades of the propeller. Each blade is provided with a stem having two bearings *f'* and *g'*, and the stem is provided with a toothed pinion or a segment of a toothed pinion *h* on that part of it between the two said bearings. These bearings are journaled in the holes *f* and *g*, respectively, and the pinion is arranged in the annular chamber of the hub and in the groove or slot E of the reversing-sleeve and in gear with the teeth of its rack. The propeller-blades are reversed or adjusted by moving the reversing-sleeve longitudinally on the propeller-shaft, and the reversing-sleeve may be operated by any approved mechanism.

I is a reversing-rod which projects through a suitable stuffing-box *i* on the stern of the boat A and which is pivoted by a pin *i'* to an arm *j*, which projects from one side of a ring J. The ring J is preferably made in halves, and it is provided with an arm *k* on the opposite side of it from the arm *j*. The arm *k* is pivoted by a pin *k'* to the outer end of a rod or link *m*, the inner end of which is pivoted by a pin *m'* to a bracket *n*, secured to the stern of the boat A. Any approved handle and catch mechanism may be used inside the boat for operating and holding the reversing-rod.

The hub *d* of the reversing-sleeve is provided with a circumferential groove *o*, and *o'* represents blocks which are pivoted to the ring J and which engage with the said groove.

P represents screw-threaded pins inserted in holes in the propeller-hub. The ends of these pins engage with circumferential grooves in the bearings *f'*, and they prevent the blades from being separated from their hub.

What I claim is—

1. The combination, with a propeller-shaft, and a propeller-hub secured thereon and provided with an annular chamber and radial bearings; of propeller-blades provided with stems which are journaled in the said bearings and which are provided with toothed pinions arranged in the said chamber, a reversing-sleeve arranged in the said chamber and provided with slots and toothed racks which engage with the said pinions, and means for sliding the said sleeve longitudinally of the propeller-shaft.

2. The combination, with a propeller-shaft, and a propeller-hub secured thereon and provided with an annular chamber and radial

holes of different diameter at opposite sides of the said chamber the outer holes being larger than the inner holes; of propeller-blades having stems provided with bearings which are journaled in the said holes and having circumferential slots in the larger bearings, retaining-pins inserted crosswise through the hub and engaging with the said slots, toothed pinions on the said stems between the said bearings, a reversing-sleeve arranged in the said annular chamber and provided with slots and toothed racks which engage with the said pinions, and means for sliding the said sleeve longitudinally of the propeller-shaft.

3. The combination, with a propeller-shaft, and a propeller-hub secured thereon and provided with an annular chamber and radial holes; of propeller-blades provided with stems which are journaled in the said radial holes and which are provided with toothed pinions arranged in the said chamber, a reversing-sleeve arranged in the said chamber and provided with slots and toothed racks which engage with the said pinions; said sleeve having also a hub on its projecting end which is mounted on the said propeller-shaft and provided with a circumferential groove, a ring which encircles the sleeve-hub and which is provided with pivoted blocks which engage with the said groove, arms projecting at the opposite sides of the said ring, a supporting-rod pivoted to one of the said arms, and a slidable reversing-rod pivoted to the other said arm.

In testimony whereof I have affixed my signature in the presence of two witnesses.

EDWARD G. MEINECKE.

Witnesses:
CHAUNCEY C. HAYWARD,
JAMES B. WATSON, Sr.