No. 849,176. PATENTED APR. 2, 1907.

H. THORMEYER.

PROPELLING MECHANISM FOR BOATS.

APPLICATION FILED NOV. 5, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

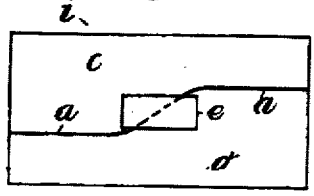



Fig. 2.

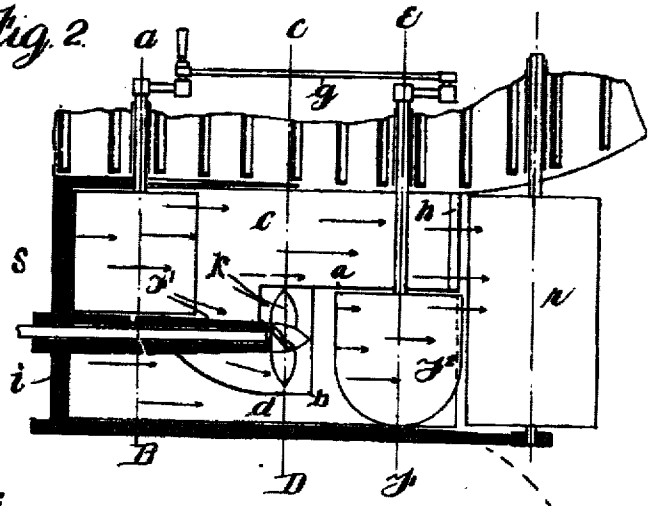



Fig. 4.

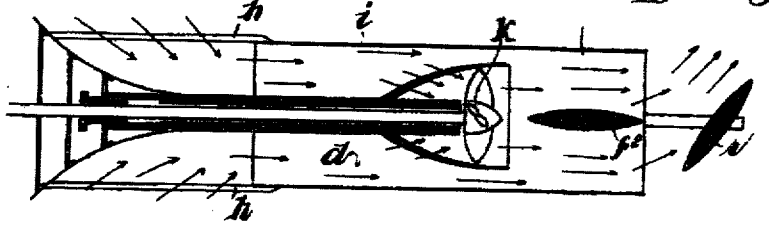
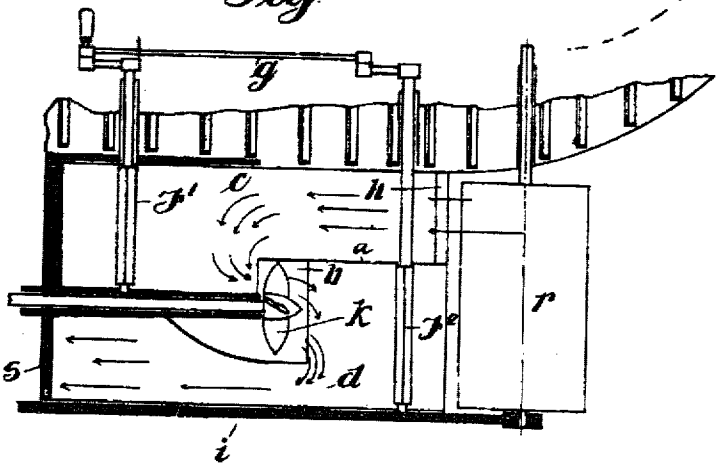



Fig. 3.




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2 SHEETS—SHEET 2.

Fig. 8.

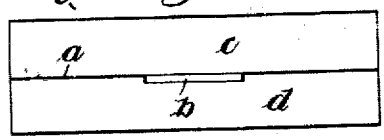



Fig. 9.

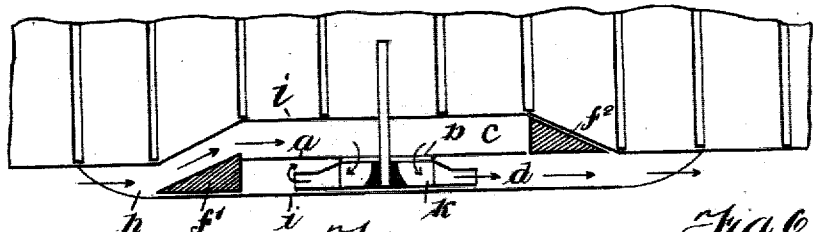



Fig. 5.

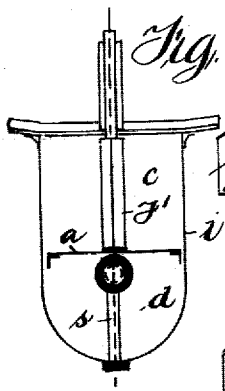



Fig. 10.

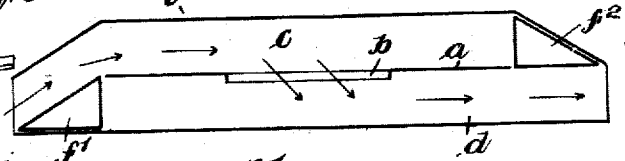



Fig. 6.

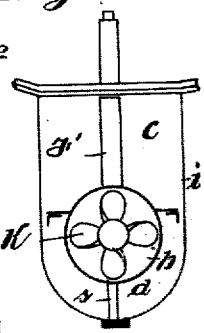



Fig. 11.

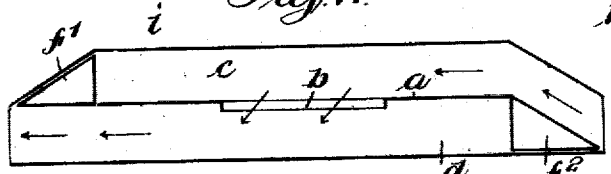



Fig. 12.

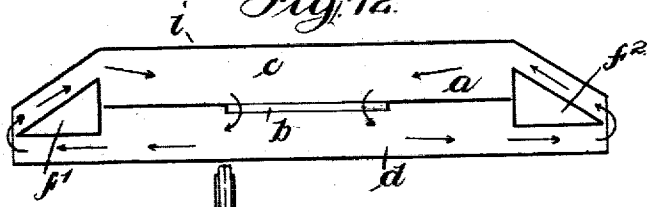
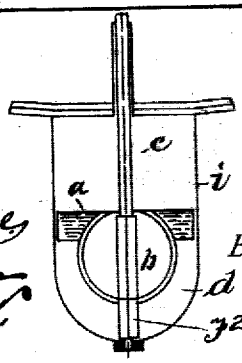



Fig. 7.




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# UNITED STATES PATENT OFFICE.

HANS THORMEYER, OF FRIEDENAU, GERMANY.

## PROPELLING MECHANISM FOR BOATS.

No. 849,176. Specification of Letters Patent. Patented April 2, 1907.

Application filed November 5, 1906. Serial No. 342,135.

*To all whom it may concern:*

Be it known that I, HANS THORMEYER, a citizen of the Kingdom of Prussia, German Empire, residing at Friedenau, near Berlin, Bennigscustrasse 5, Germany, have invented certain new and useful Improvements in Propelling Mechanism for Boats, of which the following is a specification, reference being had therein to the accompanying drawings.

My present invention relates to a device for reversing the water-current for ships' propellers which are driven by machines only rotating in one direction.

The device consists of a casing which is open at the back and front ends and attached to the stem or stern or to the bottom of the ship. Said casing is divided by a partition into two chambers, and these chambers are connected with each other by a short pipe or opening. In or in front of said opening the propeller is provided. Said chambers have devices for controlling the flow of water and are opened and closed according to the direction in which the water flows through the device.

When the propeller is arranged vertically, the closing devices can remain open while advancing; but in the case of the propeller being arranged horizontally the back of the suction-chamber and the front of the pressure-chamber are closed.

If the propeller is disposed vertically, the suction-chamber at the front and the pressure-chamber at the back are closed in driving backward. The current of water must then enter the suction-chamber at the back and pass out of the pressure-chamber at the front, so that the current of water will drive the ship backward. In the event of the propeller being disposed horizontally the suction-chamber at the front and the pressure-chamber at the rear are closed in driving backward.

In the accompanying drawings, illustrating the invention by way of example, Figure 1 is a longitudinal diagrammatic section; Fig. 2, a vertical section showing both of the chambers open for driving forward; Fig. 3, a vertical section showing the chambers open on one side and closed on the other for driving backward. Fig. 4 is a horizontal section through the center of the propeller-shaft according to Fig. 2; Fig. 5, a section on the line A B of Fig. 2; Fig. 6, a section on the line C D of Fig. 2; Fig. 7, a section on the line E F of Fig. 2. Fig. 8 is a view similar to Fig. 1, illustrating a modification in the construction. Fig. 9 is a vertical section of the modified structure shown in Fig. 8. Fig. 10 is a vertical section of the improved device with the parts arranged for moving forward. Fig. 11 is a vertical section of the improved device with the parts arranged for moving rearwardly. Fig. 12 is a vertical section of the improved device with the parts arranged for stopping the vessel, the operation of the propeller being neutralized by the central position of the closing devices.

In all the figures the direction of the flow of water in the various positions of the closing devices is represented by arrows, and the same letters of reference are used in all the figures.

The device is supposed to be attached to the stern of the ship.

*i* is the casing, which is divided into two chambers *c d* by the partition *a*. Said chambers *c d* communicate with each other through the short pipe *b*, in which the propeller *k* is disposed. At the front of the chamber *c* a closing device $f'$ is provided, and the chamber *d* has a similar closing device $f^2$ at the back. The closing devices $f' f^2$ can be connected with each other by rods *g*. *s* is the stern of the ship, *r* the rudder, and *h* a grating to prevent foreign bodies from passing to the propeller.

The operation of the device is as follows: In order to advance, the devices $f' f^2$ are opened, Fig. 2. The water then enters the chambers *c d* at the front and is driven out at the back, so that the ship is advanced. For the purpose of driving backward the devices $f' f^2$ are closed, in which case the propeller, which rotates in the same direction as before, sucks the water into the chamber *c*, which is opened at the back, and drives said water through the opening *b* into the chamber *d*, out of which it flows forward, thus propelling the ship backward.

In order to use the invention for propellers rotating in a horizontal plane, the opening or short pipe *b*, connecting the chambers *c d*, must be disposed vertically, as shown in Figs. 8 to 12, and with the propeller *k* also disposed horizontally. The devices $f' f^2$ employed in the structures shown in Figs. 8 to 12 are adapted to be moved bodily and later-

ally past the ends of the division member *a*, and thus serve to direct the currents in any desired direction, the parts $f' f^2$ in all of the modifications operating in substantially the same manner and producing the same results.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. A device for reversing the direction of the water in driving ships by propellers rotating in one direction, comprising in combination a casing, a partition dividing said casing into two chambers and having an opening connecting said chambers with each other, a propeller rotating in said opening, and closing devices adapted to open and close said chambers at the front and rear, substantially as, and for the purpose, set forth.

2. A device for reversing the direction of the water in driving ships by propellers rotating in one direction, comprising in combination a casing, a partition dividing said casing into two chambers and having an opening connecting said chambers with each other and containing said propeller, closing devices in said chambers, and means connecting said closing devices together, substantially as, and for the purpose, set forth.

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

HANS THORMEYER.

Witnesses:
HENRY HASPER,
WOLDEMAR HAUPT.