

D. GOUGH.
Propelling Device for Vessels.

No. 216,175.

Patented June 3, 1879.

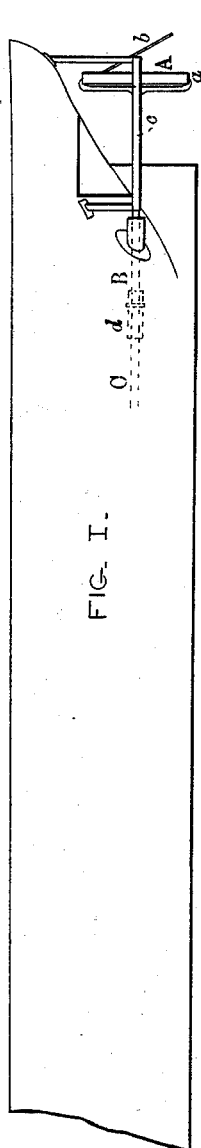


FIG. I.

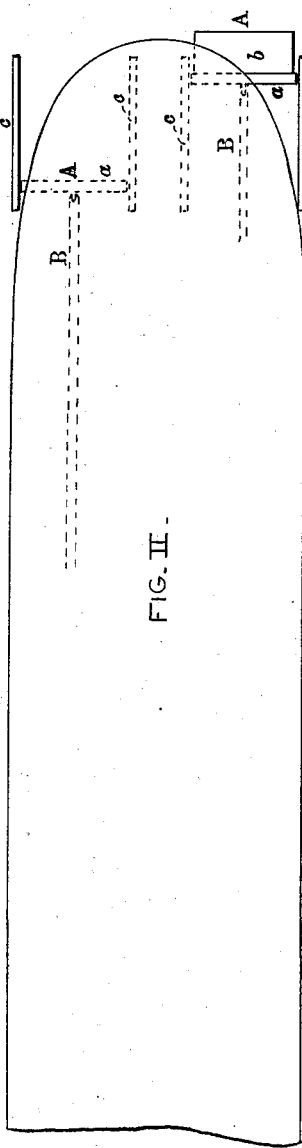


FIG. II.

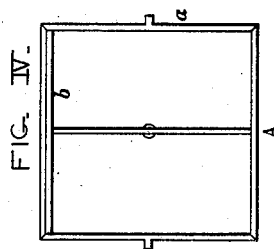


FIG. IV.

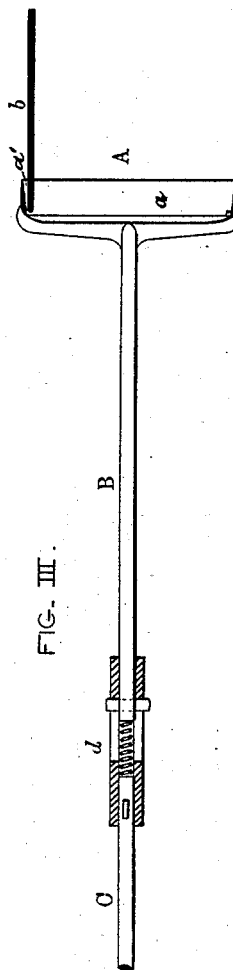


FIG. III.

—WITNESSES—

Alexander Scott

—INVENTOR—

Dixon Gough
by *A. H. W. Thomas*
Attorney.

UNITED STATES PATENT OFFICE.

DIXON GOUGH, OF CARROLLTON, MARYLAND.

IMPROVEMENT IN PROPELLING DEVICES FOR VESSELS.

Specification forming part of Letters Patent No. **216,175**, dated June 3, 1879; application filed February 20, 1879.

To all whom it may concern:

Be it known that I, DIXON GOUGH, of Carrollton, in the county of Baltimore and State of Maryland, have invented certain Improvements in Propelling Devices for Vessels, of which the following is a specification; and I do hereby declare that in the same is contained a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to certain improvements in that class of propelling devices for vessels distinguished by a pair of frames having hinged doors or valves adapted to be alternately forced from the vessel to propel the same in a forward direction; and the said invention consists, first, in a peculiar construction of the frame of the propeller, whereby the door or valve forming a part of the same is more readily closed by the action of the water upon the commencement of the propelling movement or stroke.

The said invention consists, secondly, in effecting an elasticity in the propelling devices during their stroke to prevent or diminish dispersion of the water.

It is well known that if a perfectly rigid body is projected into a body of water a greater dispersion of the water will occur than if the projected body be flexible in character. In view of this fact the ordinary oar is made of such thickness as will enable it to yield slightly to the strain placed on it. The oar being the lever, and the water the fulcrum, it is obvious that to obtain the best results the fulcrum should be as far as possible immovable. With the same object in view, I make the shaft which carries the valve or body projected against the water flexible by placing between two sections of said shaft an inclosed elastic body, which, as the valve is forced against the water, is compressed, the dispersion of the water being in a large measure prevented.

In the drawings forming a part hereof, Figure 1 is a side view of the after portion of a vessel to which my improved propelling devices are attached, and Fig. 2 a plan of the same. Figs. 3 and 4 are views of parts of the invention on an enlarged scale.

Similar letters of reference indicate similar parts in all the views.

A A are the propellers, each one of which consists of an open frame, *a*, to which a door or valve, *b*, is hinged. The valves or doors are hinged to their frames in such manner as to at all times keep their upper edges in contact with the frames, and practically prevent the passage of water through the frames at that point.

The upper inner part of the frame is beveled upward and outward, as shown by *a'*, so as to utilize the water driven between the surface of the frame and the valve by the first backward movement of the propeller as a wedge or lever to effect the sudden fall of the valve or door.

It will be understood that in this construction the propeller is operative and acts as a propelling device from the inception to the end of its stroke. The propellers are guided in their movement by means of suitable guides *c*, secured to the vessel in any appropriate manner.

The propellers are provided with rods B, which connect with the piston-rods C of the engines, and the said rods, at the point of connection or at some other suitable place, are fitted with elastic appliances, substantially as shown in the drawings and represented by *d*.

By this means the propellers are freed from injurious concussion, and a smooth and regular movement of the machinery obtained.

In backing the vessel I design to use a supplemental propelling device—such as a screw driven by the main engines or by an auxiliary one.

By connecting the propellers directly to the piston-rods of the engines I avoid all complicated intermediate devices for transmitting motion, and therefore the propellers exert nearly the full power of the engines.

This invention is easily applied to vessels of ordinary build, only slight alterations in their hulls being necessary.

Having thus described my invention, what I claim as new is—

1. The longitudinally-moving rod B and frame *a*, the upper part of said frame being beveled, as at *a'*, combined with one or more

hinged doors or valves, *b*, substantially as specified, there being a wedge-shaped space left between the frame and the raised door or valve, whereby the water may act on the latter, as described.

2. In a vibrating propelling apparatus, the rod B, carrying the frame A and hinged door or valve *b*, combined with the elastic connection *d* and piston-rod C, substantially as set forth.

In testimony whereof I have hereunto set my hand and affixed my seal this 18th day of February, A. D. 1879.

DIXON GOUGH. [L. S.]

Witnesses:

WM. T. HOWARD,

JNO. T. MADDOX.