

H. C. CAMP.

Means for Propelling Vessels.

No. 134,730.

Patented Jan. 14, 1873.

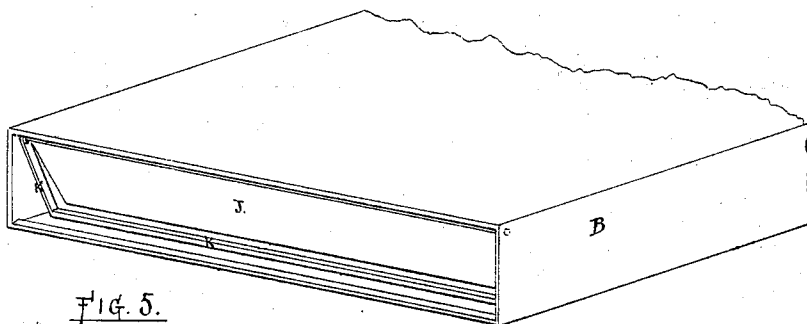


Fig. 5.

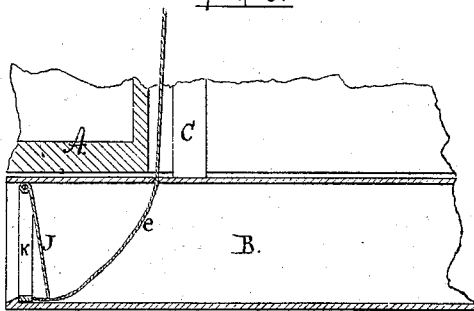


Fig. 3.

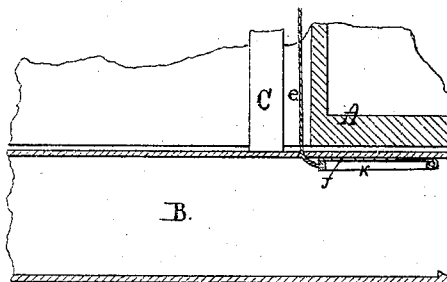


Fig. 4.

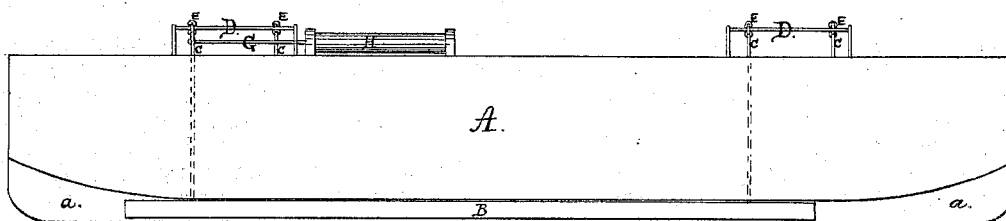


Fig. 2.

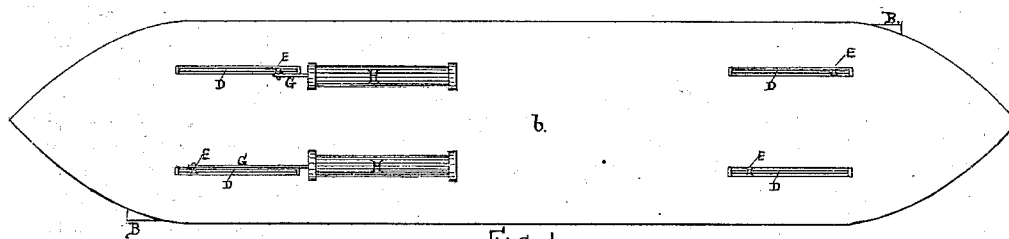


Fig. 1.

Witnesses.

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# UNITED STATES PATENT OFFICE.

HENRY C. CAMP, OF ST. PAUL, MINNESOTA.

## IMPROVEMENT IN MEANS FOR PROPELLING VESSELS.

Specification forming part of Letters Patent No. 134,730, dated January 14, 1873.

### *To all whom it may concern:*

Be it known that I, HENRY C. CAMP, of St. Paul, in the county of Ramsey and State of Minnesota, have invented certain Improvements in the Mode of Propelling Vessels and Utilizing Power, of which the following is a specification:

My invention consists in a new method of utilizing motive power which is applicable to propelling bodies through the water or through the air, and may be used for many other purposes. I have in this specification shown it especially as adapted to the propulsion of a boat, and in the drawing have given, in—

Figure 1, a plan view, and in Fig. 2, a side view of a boat fitted with my device. In Fig. 3 is shown, in section, one end of the propeller (as attached to the vessel) when the valve is shut; and in Fig. 4 the same when the valve is open. Fig. 5 is a perspective view of the end of a propeller with the valve and frame partly open.

A represents the hull of a boat, *a* the keel, and *b* the deck. B is a tube, made of any suitable material and suspended beneath the hull by means of the bearers C, which pass through wells in the hull (like the cases of a center board) and are supported on ways D raised from the deck. E E are rollers to prevent the friction of the bearers on the ways. The bearers are connected to the piston-rod G of an engine in any ordinary way, but the most simple known to me is that shown in the drawing, where there is a direct reciprocating action given from the cylinder H. At each end of the tube B I hinge a valve or gate, J, opening inward, and provided with a suitable stop to prevent its being thrown outward. I prefer also to hinge a frame, K, to serve both as a stop and a guard to the gate. From this frame I pass a rope or chain, *e*, up through the well and attach it to the upper part of the bearer C.

In operating my mechanism I fasten one of

the gates out of the way, as shown in Fig. 4, and then let steam into the cylinders H H in the ordinary manner. If the stroke of the piston is in the direction shown by the arrow, Fig. 3, the loose gate will open and the tube will pass freely through the water, but on reversing the stroke the gate at once closes, and as the inertia of the water in the tube has not been disturbed the tube takes the form of a solid column, against which the power of the engine is exerted, and by which the boat is forced along. The force of the stroke can be regulated, if necessary, by raising or lowering the valve in such a manner that it would be held partially open, and thus operate to lessen the inert body of water.

Instead of placing the propellers below the hull of a vessel, they may be placed at the sides, and operated in a similar manner to that described.

I have shown two propellers as working alternately on opposite sides of the boat, but they could readily be arranged to work together, or one or more propellers might be used. In a canal-boat two would probably be best, and from the fact that they move little of the water there can be little wash to the banks.

The application of this propelling device to a column of air for use above a boat or to propel a balloon will readily suggest itself, and other applications may be made for other purposes.

I claim as my invention—

1. The combination of the reciprocating tube B, gates J, and ways D with a motive power, substantially as and for the purpose specified.
2. The combination of the gates J, frames K, and tube B, substantially as specified, whereby either gate may be raised to change direction, as required.

Witnesses:

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