

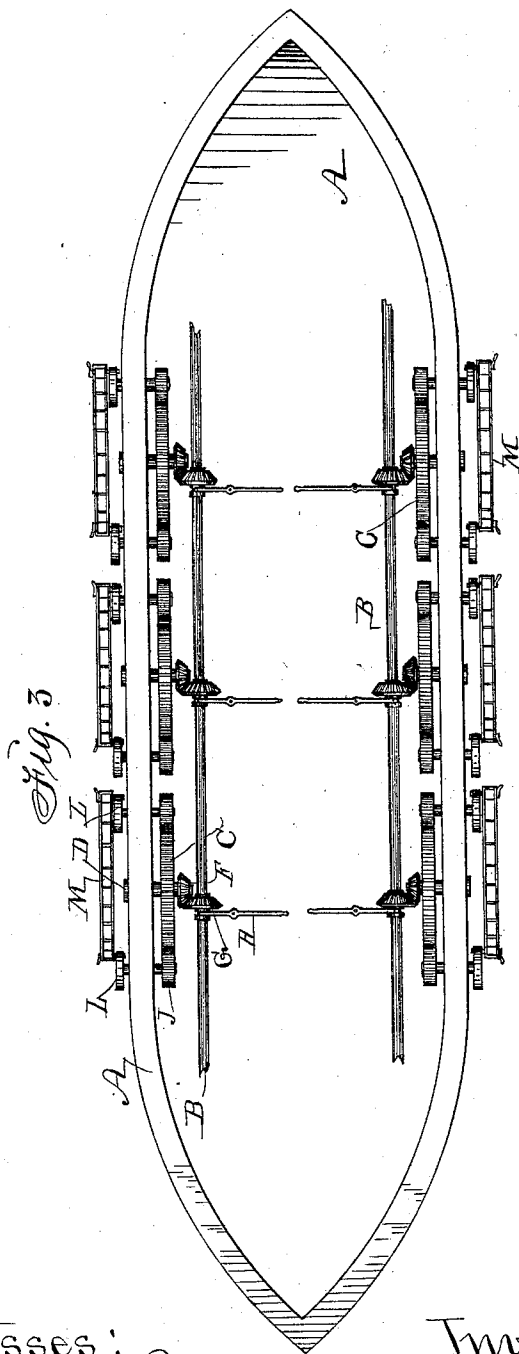
(No Model.)

2 Sheets—Sheet 2.

H. B. ALLISON.
PROPELLER FOR VESSELS.

No. 387,616.

Patented Aug. 14, 1888.



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UNITED STATES PATENT OFFICE.

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PROPELLER FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 387,616, dated August 14, 1888.

Application filed April 23, 1888. Serial No. 271,654. (No model.)

To all whom it may concern:

Be it known that I, HUGH B. ALLISON, a citizen of the United States of America, and a resident of Des Moines, in the county of Polk and State of Iowa, have invented a new and useful Propeller for Vessels, of which the following is a specification.

My object is to increase the speed of a vessel without increasing the motive power, and also to facilitate the governing of the course of a vessel; and my invention consists in the construction and combination of series of vertically-adjustable paddles with operating mechanism, as hereinafter set forth, in such a manner that the paddles will have direct vertical motions, as required, to be dipped in and out of the water, and also direct horizontal motion, as required, to press against the water and to advance the vessel in the opposite direction from such pressure.

Figure 1 of the accompanying drawings is a top view, and Fig. 2 a side view, showing my propeller and driving mechanism combined with a section of a vessel. Fig. 3 is a top view of a vessel having three of my propellers attached on each side in such a manner that they can be operated in concert to propel the vessel backward or forward.

A represents a marine vessel, boat, or ship of any size or capacity desired.

B is a driving-shaft adapted to be connected with an engine in any suitable way.

C is a drive-wheel fixed to an axle, D, that has a bevel-gear, F, at its inner end.

G is a bevel-gear connected with the shaft B in such a manner that it will engage the wheel F, and also in such a manner that it can be readily moved on the shaft by means of a lever, H, or in any suitable way, to disconnect the two bevel-gears F and G, as required, to start or stop the propeller connected with the driving mechanism.

D² are short shafts in bearings fixed in the wall of the vessel to extend parallel with the axle D.

J are small gear-wheels fixed to the inner ends of these shafts to engage the drive-wheel C.

L are crank-wheels on the outer ends of the same shafts.

M is a frame, to which a series of paddles, 1 2 3 4, is fixed to extend downward parallel

with each other and at right angles to the horizontal top bars of the frame. Vertical slots *n* in the ends of the frame allow the wrist-pins projecting outward from the crank-wheels to be extended through the slots in the frame, and nuts *o*, placed on the screw-threaded ends of the pins, serve as a means of securing the propeller to the crank-wheels in such a manner that when the drive-wheel is operated it will actuate the crank-wheels and rotate them in concert in the same direction, as required, to raise and lower the propeller-frame and paddles, and also move it longitudinally at each revolution of the crank-wheels. The pressure of the series of paddles against the water at each horizontal motion of the propeller, while on the lower side of the axis of the crank-wheels, will impel the vessel in the opposite direction, and the completion of the revolution of the crank-wheels will elevate the paddles and carry them forward while out of the water, so that there will be no power lost, nor the motion of the vessel impeded in pressing against the water in making the forward motion of the paddles. The numbers and sizes of the paddles connected with each propeller-frame, and the size of the frame, may vary as required for vessels of different sizes. The number of pairs of propellers connected with a vessel may also vary.

By simply reversing the motion of the engine and the rotating motion of the driving-shaft and drive-wheel the motions of the propeller-frames and paddles will be reversed, as required, to reverse the course of the vessel without turning the vessel around.

By raising and lowering the propeller-frames relative to the crank-wheels the paddles can be readily adjusted relative to the water.

I am aware a frame has been connected with cranks and paddles adjustably connected with the frame, so they could be separately raised and lowered on the frame; but a frame carrying fixed paddles and made vertically adjustable relative to crank-shafts and a vessel in such a manner that all the paddles can be jointly raised and lowered is novel and greatly advantageous.

I claim as my invention—

1. A vertically-adjustable propeller for marine vessels, comprising an elongated frame of

bar having slots in its ends, a series of paddles extending downward at right angles to the frame and parallel to each other, in combination with two crank-wheels connected by means of wrist-pins and nuts, or their equivalents, to said frame, and driving mechanism to operate in the manner set forth, and for the purposes stated.

10 2. The propeller-frame M, having fixed paddles 1 2 3 4, and vertical slots *n*, in combination with the wheels L, having fixed wrist-pins, and detachable nuts on the ends of said pins, to be vertically adjusted relative to said shafts, and mechanism for simultaneously rotating the

said wheels or cranks L in the same direction, 15 in the manner set forth, to accomplish the results stated.

3. In a propeller, a frame having fixed paddles, in combination with two parallel rotating shafts having cranks on their outer ends, 20 mechanism for simultaneously rotating said shafts, and devices for raising and lowering said frame relative to said rotating shafts, for the purposes stated.

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