

(No Model.)

2 Sheets—Sheet 1.

C. S. CARRIER.
PROPELLING MECHANISM FOR VESSELS.

No. 553,333.

Patented Jan. 21, 1896.

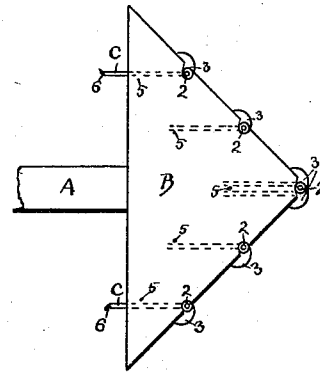
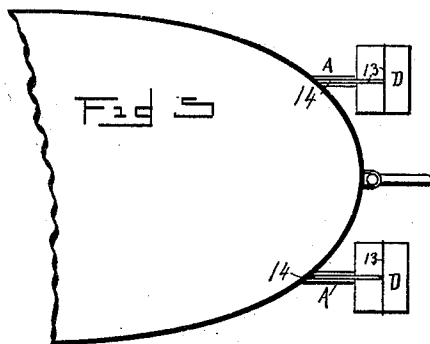
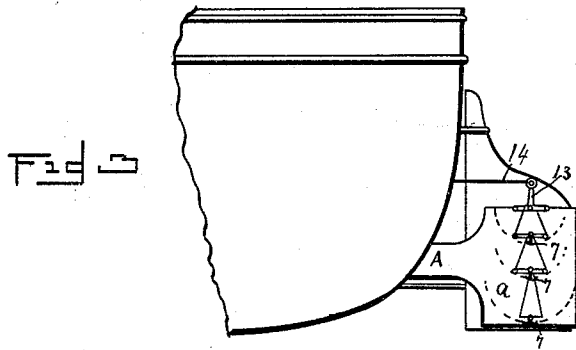
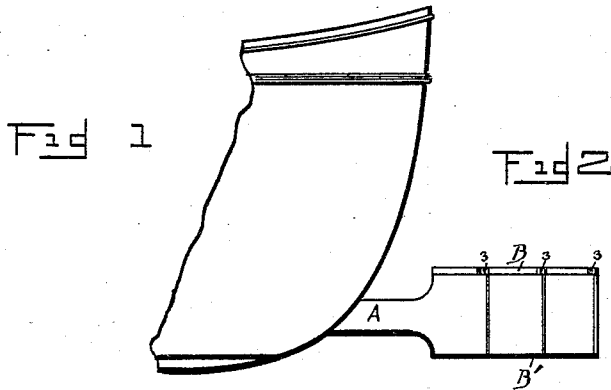


Fig 4

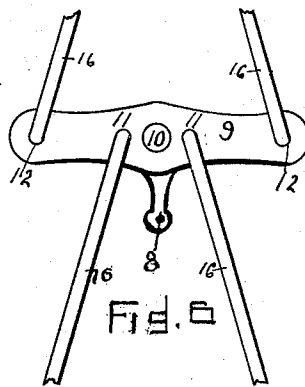
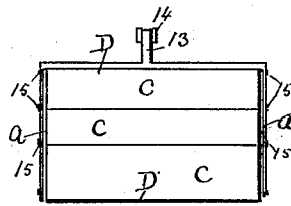


Fig 6

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(No Model.)

2 Sheets—Sheet 2.

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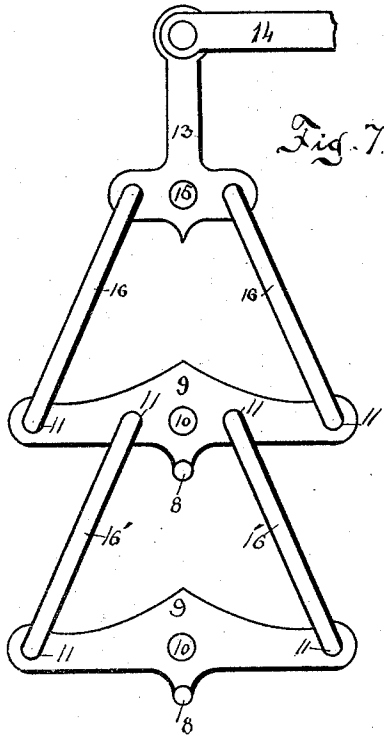


Fig. 7.

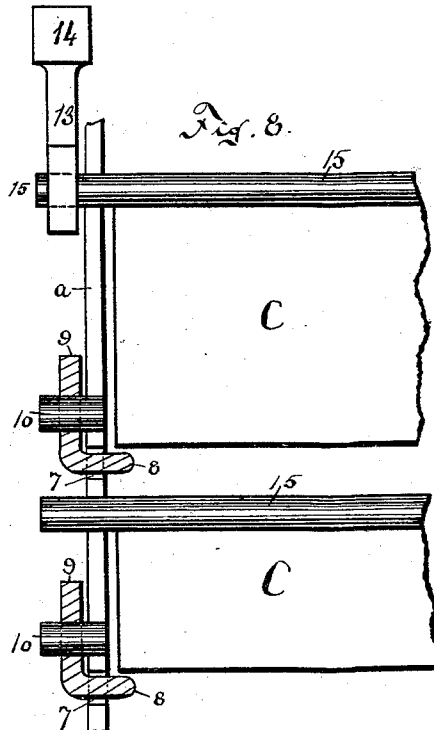


Fig. 8.

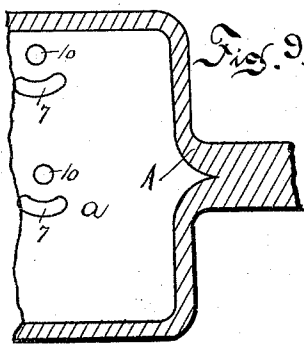


Fig. 9.

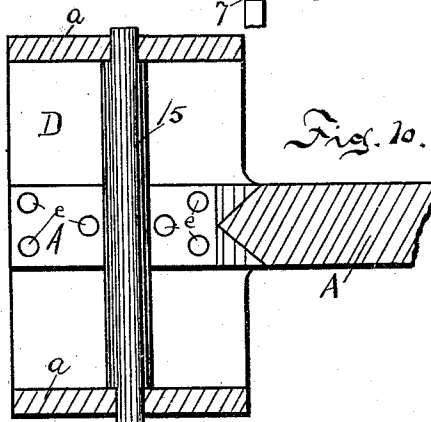


Fig. 10.

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UNITED STATES PATENT OFFICE.

COURTLAND S. CARRIER, OF OMAHA, NEBRASKA.

PROPELLING MECHANISM FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 553,333, dated January 21, 1896.

Application filed June 13, 1894. Serial No. 514,490. (No model.)

To all whom it may concern:

Be it known that I, COURTLAND S. CARRIER, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain useful Improvements in Propelling Mechanisms for Vessels; and I do hereby declare that the following is 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, reference being had to the accompanying drawings, which form a part of this specification.

This invention has relation to a new and novel means of propelling vessels, the object being to use my improved propelling device in connection with steam-vessels in driving the same by steam, as well as using the same in connection with small pleasure craft where the vessel is propelled by hand or any other suitable power.

In the accompanying drawings, Figure 1 shows a broken end view of a vessel provided with my improved bow attachment. Fig. 2 is a top view thereof, and Fig. 3 is a broken stern view of a vessel provided with my improved propeller. Fig. 4 is an end view of one of the propellers as detached. Fig. 5 shows a top view illustrating the position of my propeller, while Fig. 6 shows an enlarged detail of the connecting-bars used in my invention. Fig. 7 shows a broken detached enlarged detail showing the method of connecting the propeller-plates. Fig. 8 shows an enlarged partly-sectional end view disclosing the arrangement of the stops. Fig. 9 shows a broken sectional view of the propeller-housing, disclosing the position of the bearings and stop-openings, while Fig. 10 shows a sectional view of the propeller-housing.

AA represent the horizontally-reciprocating main driving-shafts, which, as used in my invention, are secured by a rack or any other suitable method to the main driving-power of the vessel. In front of this shaft projects and is provided with a triangular top shield B and a bottom shield B', so as to form an open-sided triangular hood, a top view of which is shown in Fig. 2. Positioned near the forward edge are a series of pivoted wings C, which wings are held in a vertical plane between the top and bottom hoods BB'. Each wing or blade is provided with a shaft 2, and

also with a stop-lug 3, which lug is adapted to abut against the edge of the top plate and so controls the movement of these blades. To further check the movement of these blades C, I provide the two shields B B' with transverse brace-rods 5, which aid in strengthening the hood and at the same time check the inward movement of these blades C. In the rear each blade is further provided with a curved tip 6, which flares slightly to the side against which these blades rest when in a closed position.

The operation of this forward driving mechanism is as follows: As the main driving-bar A is shoved away from the bow of the boat the blades C all assume a position in line with the path of the vessel, as shown in Fig. 2. This, of course, is due to the action of the water striking these pivoted blades and swinging them into their proper position. As soon, however, as the reciprocating bar A would be carried rearward by the driving-power of the vessel the fans would be closed by virtue of the small flange 6 coming in contact with the water and giving these blades direction. As the hood would continue to be turned backward the water would, of course, be confined within this hood formed by the top and bottom plates B B', and by means of the blades C, which would have closed and formed a tight compartment which, in being drawn through the water, would offer a tremendous resistance and so propel the boat forward.

In Fig. 3 I have shown a broken rear view of the stern of a vessel provided with my improved propelling mechanism. In front the hood and blades were employed to pull the vessel, but in the rear the blades are arranged so that the vessel is pushed forward. The propelling mechanism here comprises a box having a top and bottom D D and the side pieces a, forming, practically, an open-ended receptacle with four closed sides. Swinging within this box are a series of radially-swinging blades C, which are pivoted at their upper ends, so that these blades loosely swing within this housing. The side portions a a are provided with radial slots 7, through which a pin 8 projects. This pin 8 forms part of a bar 9, which bar is secured to the side of the housing by means of a bolt 10. The bar 9 is provided with four openings, (marked 11 11

and 12 12,) as is shown in Fig. 6. The upper bar is further provided with an upwardly-extending arm 13 in place of the downwardly-extending pin 8, to which the main operating-bar 14 is secured, as is shown in Figs. 3 and 5. One of these bars 9 is secured to the transverse supporting-shaft 15, which shaft supports these wings C, as is shown in Fig. 4. To control these wings C within this rectangular frame it is simply necessary to throw the main operating-bar 14 either in or out, so that the projecting end pin 8 will be brought within the path of these swinging blades. When this rear horizontally-reciprocating propelling mechanism is used to push the boat the pins are positioned in front of the blades, so that when the bar A is forced outward the blades close and present their broadest surface to the action of the water. Should it be necessary to reverse the mechanism it can be instantly done by throwing the lever 14 in the opposite direction, which would carry these pins 8, which travel in a smaller circle than the blades C, upon the opposite side of these blades, so that they would operate to propel the boat instantly in the opposite direction. These propelling mechanisms can be used in sets or pairs, superposed or adjoining, as can also the forward triangular propeller, as shown in Figs. 1 and 2.

Now, having thus described my said inven-

tion, what I claim as new, and desire to secure by United States Letters Patent, is—

In a propelling mechanism, the horizontally reciprocating main driving shaft; a supporting housing at the projecting end of said driving shaft; a series of pivoted blades supported and loosely swinging within said housing in the path of an arc; a series of semi-circular slots within said housing; said slots, at their terminal points, extending into the path of said swinging blades; a series of pivoted bars secured to said housing provided with inwardly projecting arms working within said radial slots; said series of bars being connected by means of toggle rods; the upper of said connected bars being provided with an operating rod; said instrumentalities being so arranged that when said bars are in their central position said blades are permitted to swing unobstructed, but when in either extreme position said projecting arms come within the path of said swinging blades to check the movement of said blades either upon one side or the other, all substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

COURTLAND S. CARRIER.

Witnesses:

JOHN C. HOWARD,
G. W. SUES.