

W. Van Dusen.  
Crank Paddle.

No. 22,209.

Patented Nov. 30, 1858.

Fig. 3.

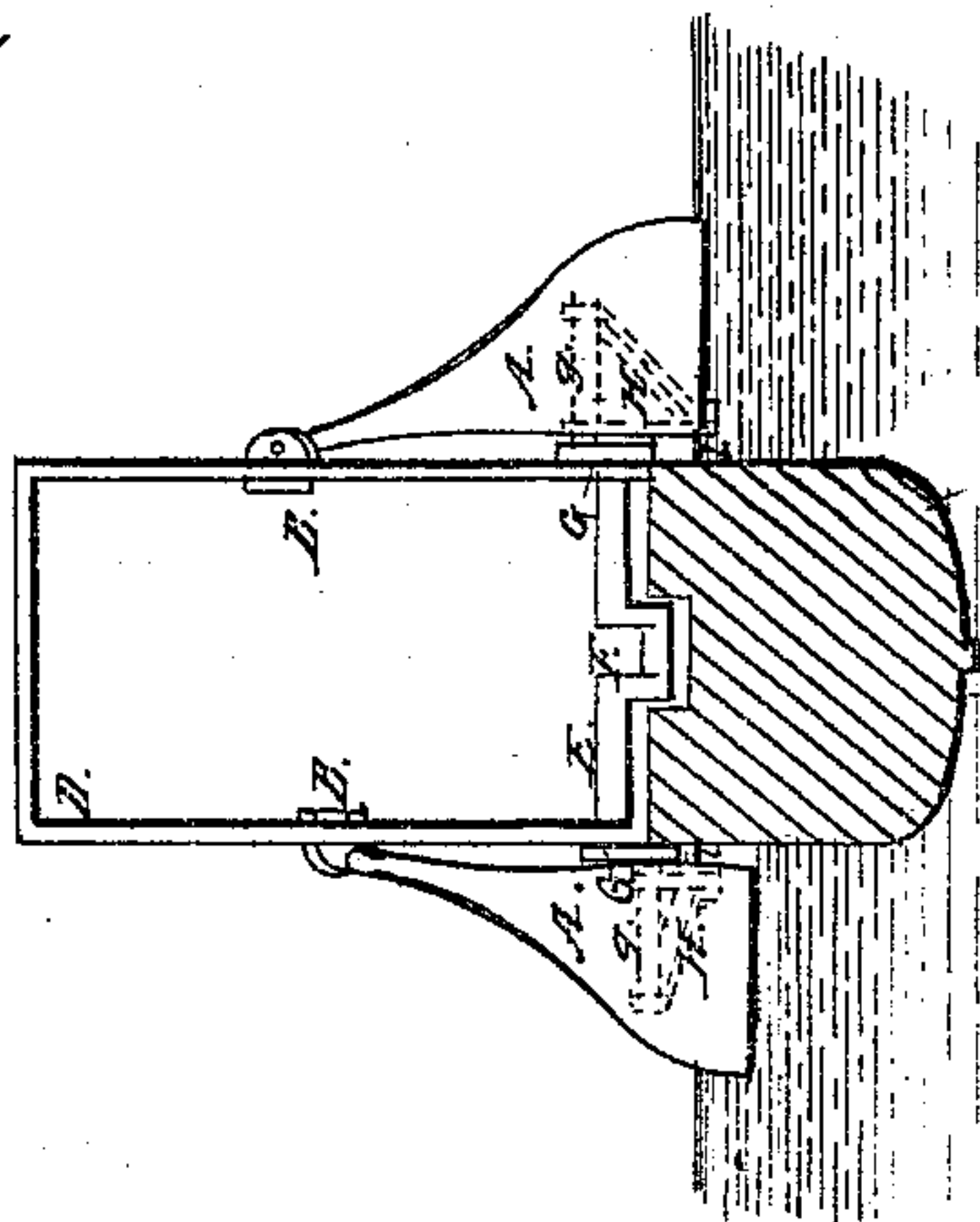


Fig. 1.

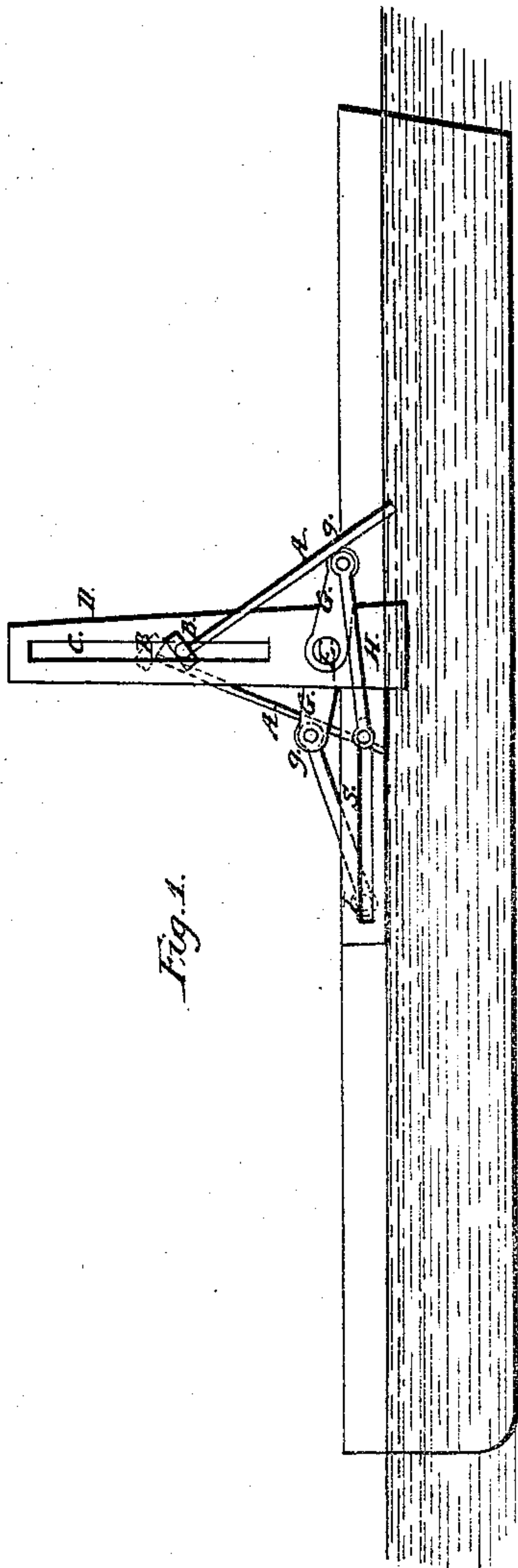
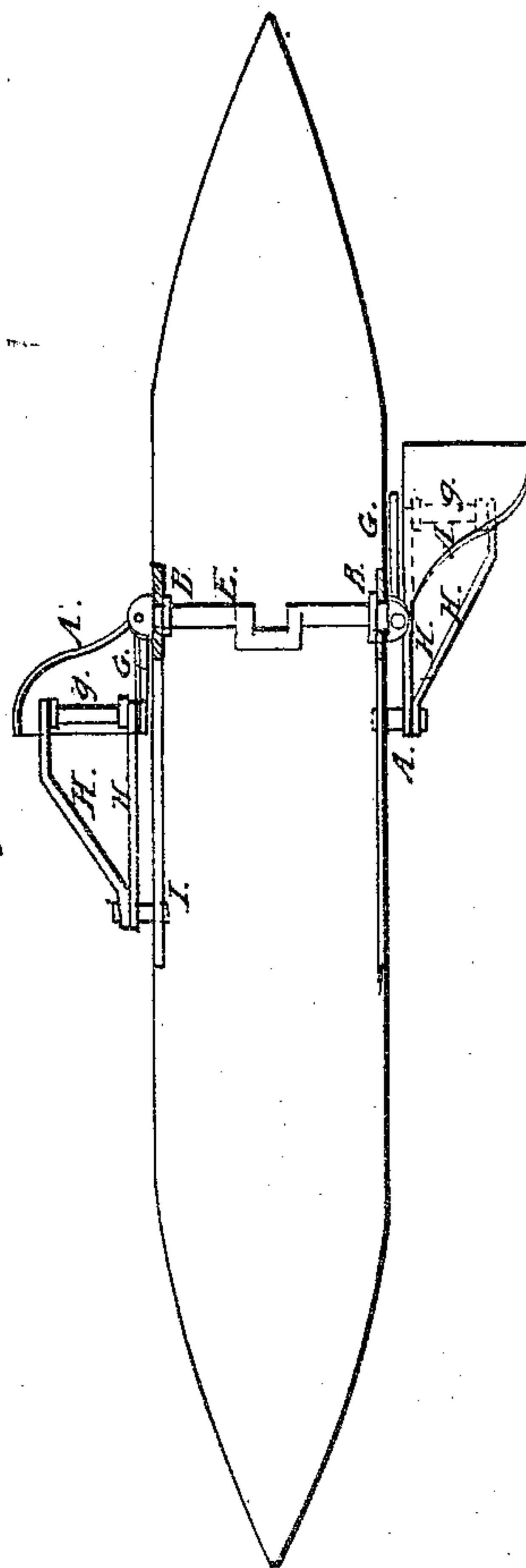


Fig. 2.



# UNITED STATES PATENT OFFICE.

WASHINGTON VAN DUSEN, OF PHILADELPHIA, PENNSYLVANIA.

## PROPELLER.

Specification of Letters Patent No. 22,209, dated November 30, 1858.

*To all whom it may concern:*

Be it known that I, WASHINGTON VAN DUSEN, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Single-Blade Reciprocating Propellers for Propelling Ice-Boats and other Vessels; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification.

Figure 1, is a side elevation of a steam vessel with the improved propeller attached. Fig. 2, is a top or bird's eye view of ditto. Fig. 3 is a vertical transverse section of the same.

Similar letters in the figures refer to corresponding parts.

The nature of this invention and improvement consists in attaching to the crank pins, which give motion to the lower ends of paddles or blades, whose upper ends are guided in their up and down movements by blocks sliding in vertical slots or grooves, the ends of brace bars, whose opposite ends are secured together at an acute angle, and are provided with bosses or nuts, which slide horizontally in slots formed in plates secured to the sides or stern of the vessel to be propelled, in such a manner as to give additional strength to the said paddles or blades, and enable them to better resist the action of the water, ice or other obstruction, likely to be encountered by the propelling paddles or blades.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

The blades or paddles A, are made in the form represented in Figs. 2 and 3, and of any suitable material and size to insure the required degree of strength. To the upper ends or shanks of each paddle or blade A, is secured a sliding block B, which is inserted in a vertical slot C, formed in the side upright of a frame D, erected above the main deck of the vessel, the two side uprights and crosspiece which constitute this frame D, being situated immediately opposite to and above the main horizontal crank shaft E,

of the engine, whose ends pass through boxes in the lower parts of the uprights. This shaft E, is provided at its center with the usual crank F, to which the pitman rod of the engine is attached and at its ends with additional cranks G, outside the uprights of the frame D, whose pins *g*, pass through suitable boxes secured to the lower portion of the paddles or blades at points above the line of their descent into the water. These crank pins *g*, also pass through openings in the ends of wrought iron bars or rods H, arranged next the ends of the said pins, and beside the boxes on the paddles or blades A, and those at the ends of the pins, next the sides of the vessel, extend therefrom at right angles, parallel to the sides of the vessel, while the bars or rods H, at the outer ends of the pins extend therefrom at an angle of about 70 degrees, from beyond the parts immediately surrounding the pin, so as to enable the two opposite ends of these bars or rods H, to join each other and be secured firmly together by bolts I, which project sufficiently far beyond the sides of the bars H, as to enable their grooved heads or blocks to be inserted and slide in horizontal slots S, formed in the sides of the vessel or in metallic plates secured thereto.

When a revolving motion is given the crank shaft E, a revolving movement is given the lower ends of the paddles or blades A, by the crank pins, while their upper ends or shanks are guided in their up and down movements by the blocks C, sliding in the slots in the uprights of the frame D, and the said lower ends of the paddles or blades A, are caused to alternately dip in the water at the sides of the vessel and act upon the same, extricate themselves therefrom, and again return through the air to the points of dip, and in this manner to propel the vessel somewhat after the manner of the action of hand paddles employed by Indians and others, in propelling canoes and other small boats; the brace bars or rods H, serving to strengthen the lower ends of the paddles and enable them to better resist the strain arising from the action of the



water and other obstructions upon them, and their tendency to twist, and thereby prevent the crank pins from being bent.

What I claim as new and desire to secure  
5 by Letters Patent, is,

The arrangement and combination of the frame D, blocks B, paddles A, cranks G,

rods H, and slots S, substantially as and for the purposes herein shown and described.

W. VAN DUSEN.

Witnesses:

JOHN CLOUDS,

JOHN VANDUSEN.