

W. D. SMITH.
Marine-Propellers.

No. 148,255.

Patented March 3, 1874.

Fig. 1.

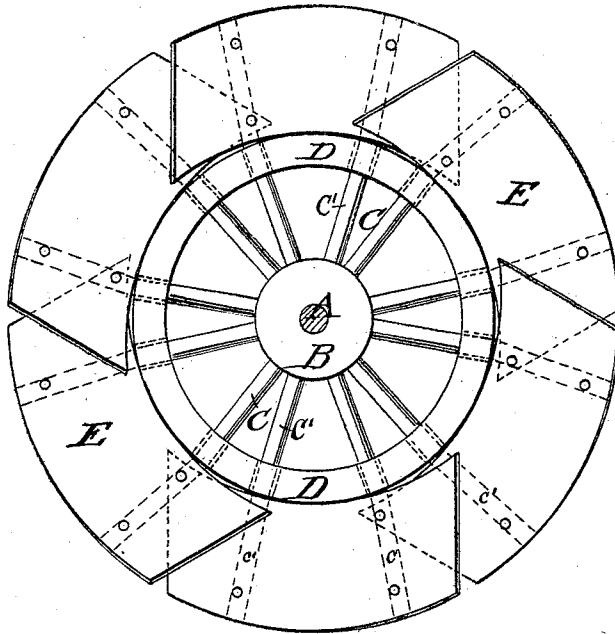
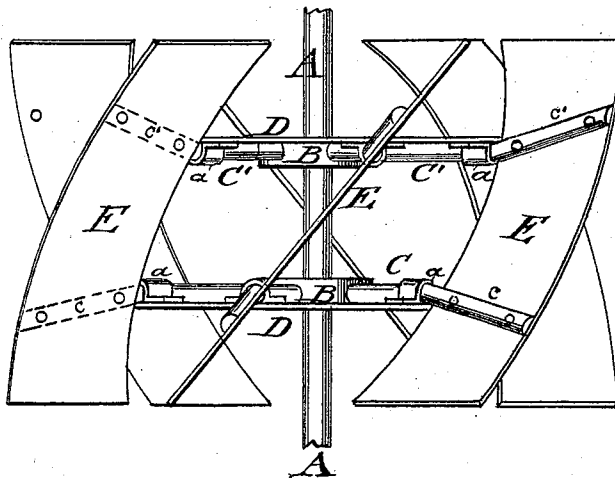


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM D. SMITH, OF KEITHSBURG, ILLINOIS.

IMPROVEMENT IN MARINE PROPELLERS.

Specification forming part of Letters Patent No. **148,255**, dated March 3, 1874; application filed September 20, 1873.

To all whom it may concern:

Be it known that I, WILLIAM D. SMITH, of Keithsburg, in the county of Mercer and State of Illinois, have invented certain Improvements in Paddle-Wheels, of which the following is a specification:

My invention relates to that class of stern-wheels in which the shaft is in a line with the keel of the vessel, like the shafts of propellers, and the paddles are set diagonally to the line of the shaft, so as to operate somewhat like a screw or propeller, though not submerged like the latter, with two series of radial arms, to which the blades are attached, one end to an arm of one series, and the other end to an arm of the other series, the arms curved outwardly where attached to the blades, to give additional strength, and curved at an angle to their radial axis, and in the transverse plane of the wheel-shaft. The invention consists in the construction of the wheels, so that the paddles or blades do not require to be bent or twisted, but are used perfectly flat, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a front elevation of my improved wheel. Fig. 2 is a top or plan view of the same.

A represents the shaft, the end of which projects from the stern of the vessel, journaled in proper bearings. B B are solid hubs, securely keyed to the shaft. C C' represent radial arms, which project outwardly from the hubs. They are so arranged that the arms on one hub are not parallel with the other, but radiate to different points of the arc, as shown by

Fig. 1 of the drawings. The ends of these arms C C' are bent at an angle from the radial line, the one series, C, in one direction, and the other, C', in the opposite direction, as shown in the drawings.

D D are circular bands, which unite and support the arms of each hub. They are secured to the arms by means of straps *a*. E represents the blades or paddles, arc-shaped in form, made preferably from plank or straight-cut wood. They are perfectly flat throughout their length. These paddles are secured to the bent ends of the arms C C' without requiring to be united or bent in any degree; and, if broken, can be readily replaced by simple screws and without the aid of skilled labor.

To those skilled in the art the great advantage and economy of my straight paddles and bent arms over the straight arms and bent paddles heretofore in use is sufficiently obvious without further description.

I do not claim attaching flat blades to single straight arms, nor to straight dual arms, by the use of knees or blocks.

What I claim as my invention is—

The two series of radial arms C C', having their ends *c c'* bent substantially as described, so that the straight blades or paddles E may be secured thereto, and operate substantially as set forth.

WILLIAM D. SMITH.

Witnesses:

B. C. TALIAFERRO,
GILBERT BREWER.