W. H. Holland.

Paddle Wheel.

No. 55,770. Patented Jun. 19, 1866.

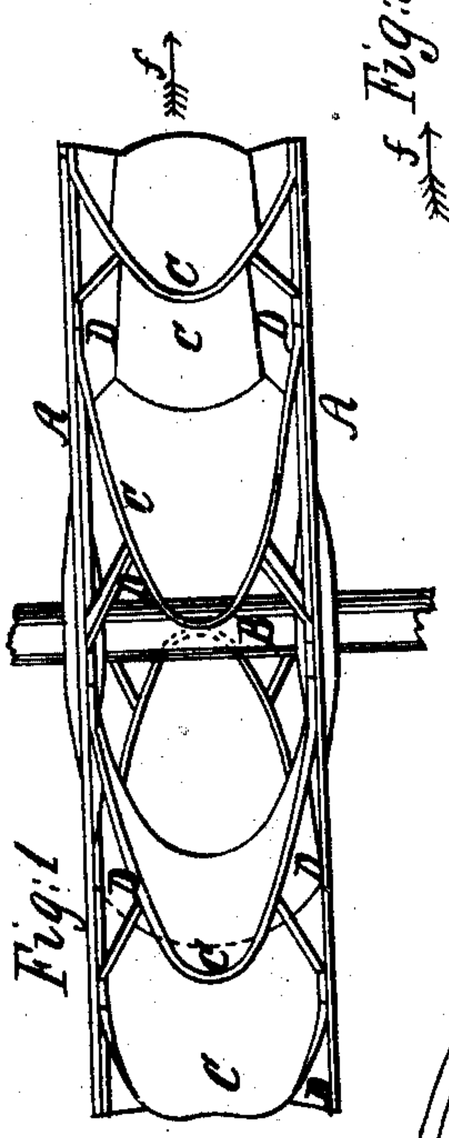

Fig: 1

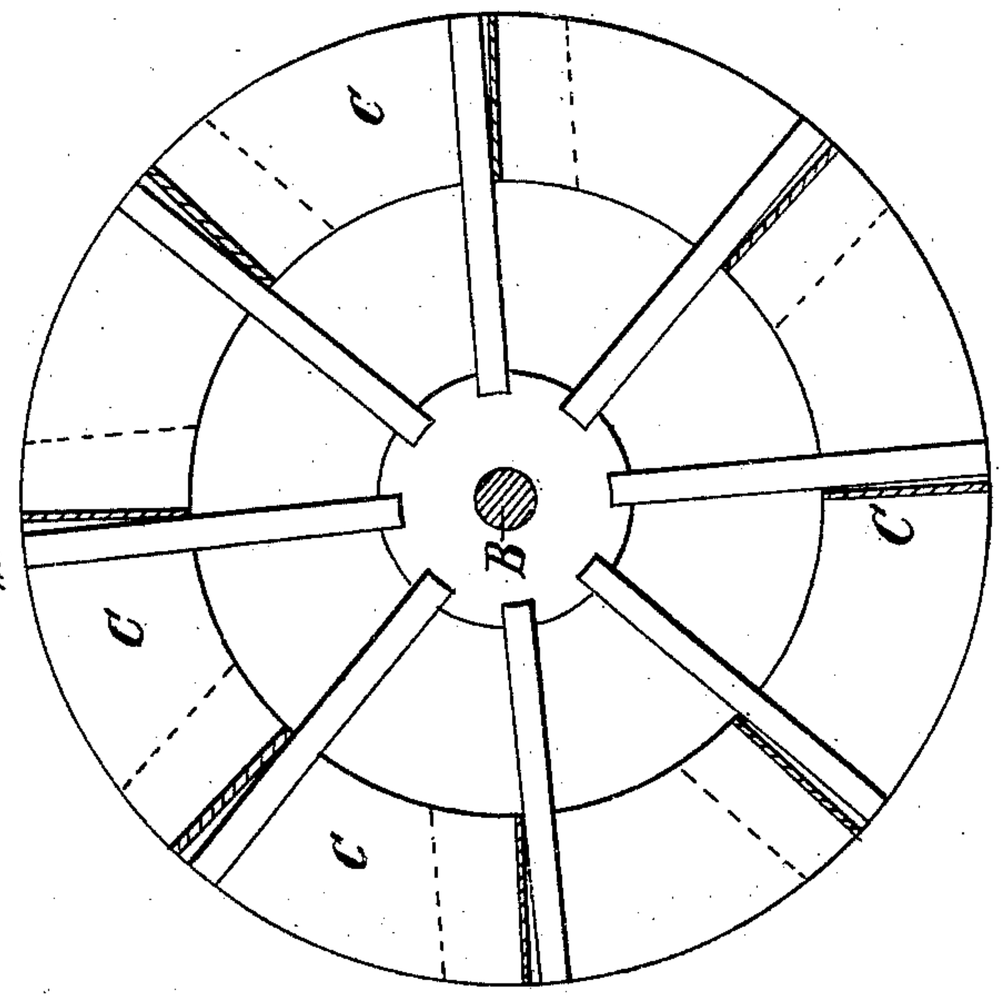

Fig: 3

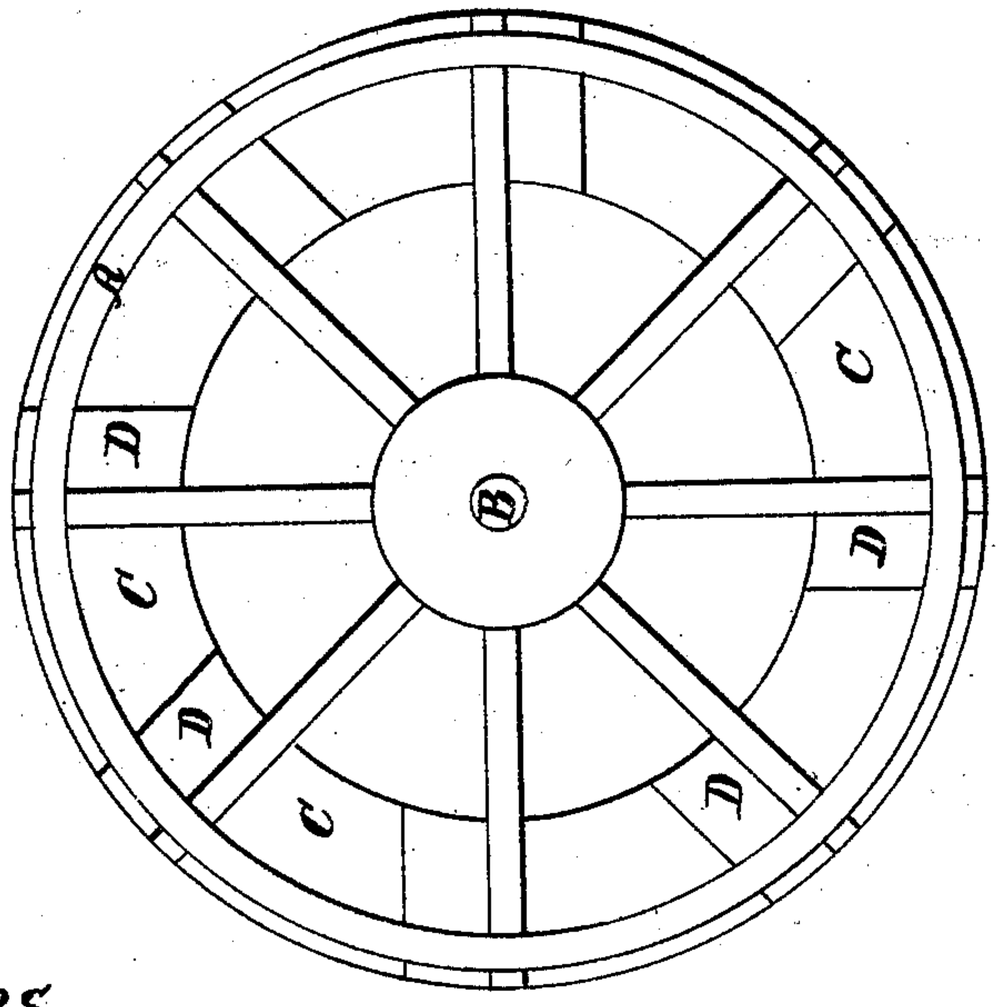

Fig: 2

Witnesses

J. P. Hale Jr

George Andrews

Inventor

William H. Holland

by his attorney.

R. H. Eddy

UNITED STATES PATENT OFFICE.

WILLIAM H. HOLLAND, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND WILLIAM GOODMAN, OF SAME PLACE.

IMPROVED PADDLE-WHEEL.

Specification forming part of Letters Patent No. **55,770,** dated June 19, 1866.

To all whom it may concern:

Be it known that I, WILLIAM H. HOLLAND, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Paddle-Wheels for Steam-Vessels; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 a side elevation, and Fig. 3 a longitudinal section, of a paddle-wheel constructed in accordance with my invention.

In the said drawings, A A are two thin wheels applied to a horizontal shaft, B, and arranged with respect to it and each other as represented. Between these two wheels, and applied to them at their rims and spokes, is a series of curved floats or buckets, C C C C. Each of such floats consists of a plate of metal bent at its middle into a form approximating to a parabola. At or near its two ends each of the floats is fastened or riveted to the two wheels A A. These floats are to be arranged at equal distances apart, and in other respects in manner as exhibited in the drawings.

In revolving the paddle-wheel for the purpose of propelling a vessel ahead, such paddle-wheel should be turned in the direction indicated by the arrow *f*—that is, so that the ends of the floats shall first enter the water and the force of propulsion be exerted against the concave side of the bucket.

Furthermore, two auxiliary wings or floats, D D, are extended from the spokes of the side-wheels A A to each of the main floats C C, such auxiliary floats being arranged in manner as represented in the drawings. They are for the purpose of enabling the wheel, when its motion is reversed, to propel the vessel astern, which it would be difficult to do with the main floats when formed as described. Besides this, the auxiliary floats serve as braces or supports for the main floats.

I claim—

The arrangement and combination of the series of auxiliary floats D D with the wheels A A and the series of main floats C C C, formed and arranged substantially as described.

WM. H. HOLLAND.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.