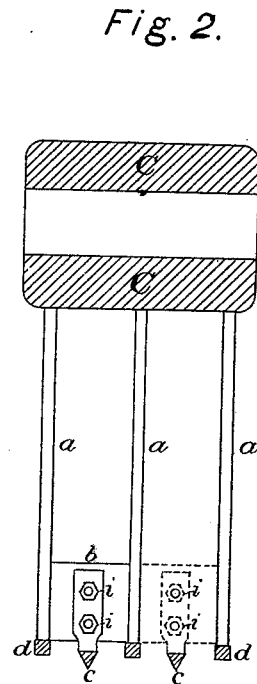
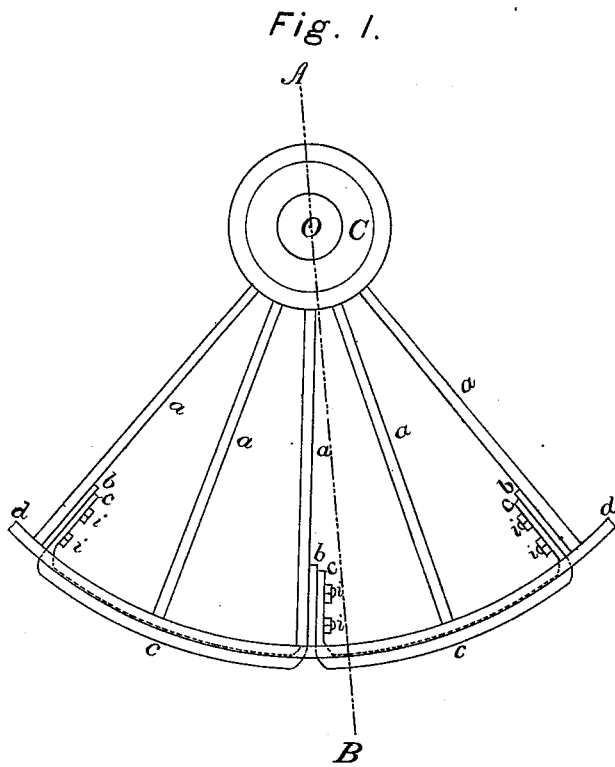


D. B. RICH.
Paddle-Wheel.

No. 197,292.

Patented Nov. 20, 1877.



WITNESSES

William Pratt
A. Coffin

INVENTOR

Dwight B. Rich

UNITED STATES PATENT OFFICE.

DWIGHT B. RICH, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF HIS RIGHT TO DAVID LORING, OF SAME PLACE.

IMPROVEMENT IN PADDLE-WHEELS.

Specification forming part of Letters Patent No. **197,292**, dated November 20, 1877; application filed October 11, 1877.

To all whom it may concern:

Be it known that I, DWIGHT B. RICH, of Boston, county of Suffolk, and State of Massachusetts, have invented a new and useful Improvement in Steamboat Paddle-Wheels, of which the following is a specification:

This invention relates to certain improvements in paddle-wheels to steamboats; whereby a wheel may be made that will be less liable to injury from floating ice, drift-wood, or other obstructions than as heretofore constructed; and consists in applying to the periphery of the wheel a series of braces that extend from one bucket to another, and are fastened thereto by suitable bolts. The brace is turned at the ends to conform to the radius of the arms to which the buckets are attached, and have a curvature to conform to the circumference of the wheel. In sectional form it may be rectangular, or the outer surface may be brought to a sharp edge, and extended slightly beyond the rim of the wheel, the more readily to cut the ice or other obstruction.

The arrangement and operation of my invention will be readily understood by reference to the drawings accompanying this specification.

Figure 1 is a side elevation, showing a section of the wheel, C being the center or hub; *a a a*, the arms supporting the rim *d d* and the buckets *b b b*. *c c* are the braces secured to the buckets *b b b* by the bolts *i i i*.

Fig. 2 is a cross-section, showing the position of the brace, and the manner of fastening it to the buckets.

It will be seen that the braces placed in the center of the bucket, or midway between the circles that form the rim of the wheel, so reduces the space that large pieces of ice or other objects will be kept out from between the buckets, and carried under the wheel without causing injury thereto. On large wheels two or more sets of braces may be employed, if desired.

Having thus fully described the nature and object of my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a steamboat paddle-wheel, the braces *c c* attached to the buckets *b b b*, and operating in the manner and for the purpose specified.

DWIGHT B. RICH.

Witnesses:

CHAS. H. COFFIN,
WILLIAM PRATT.