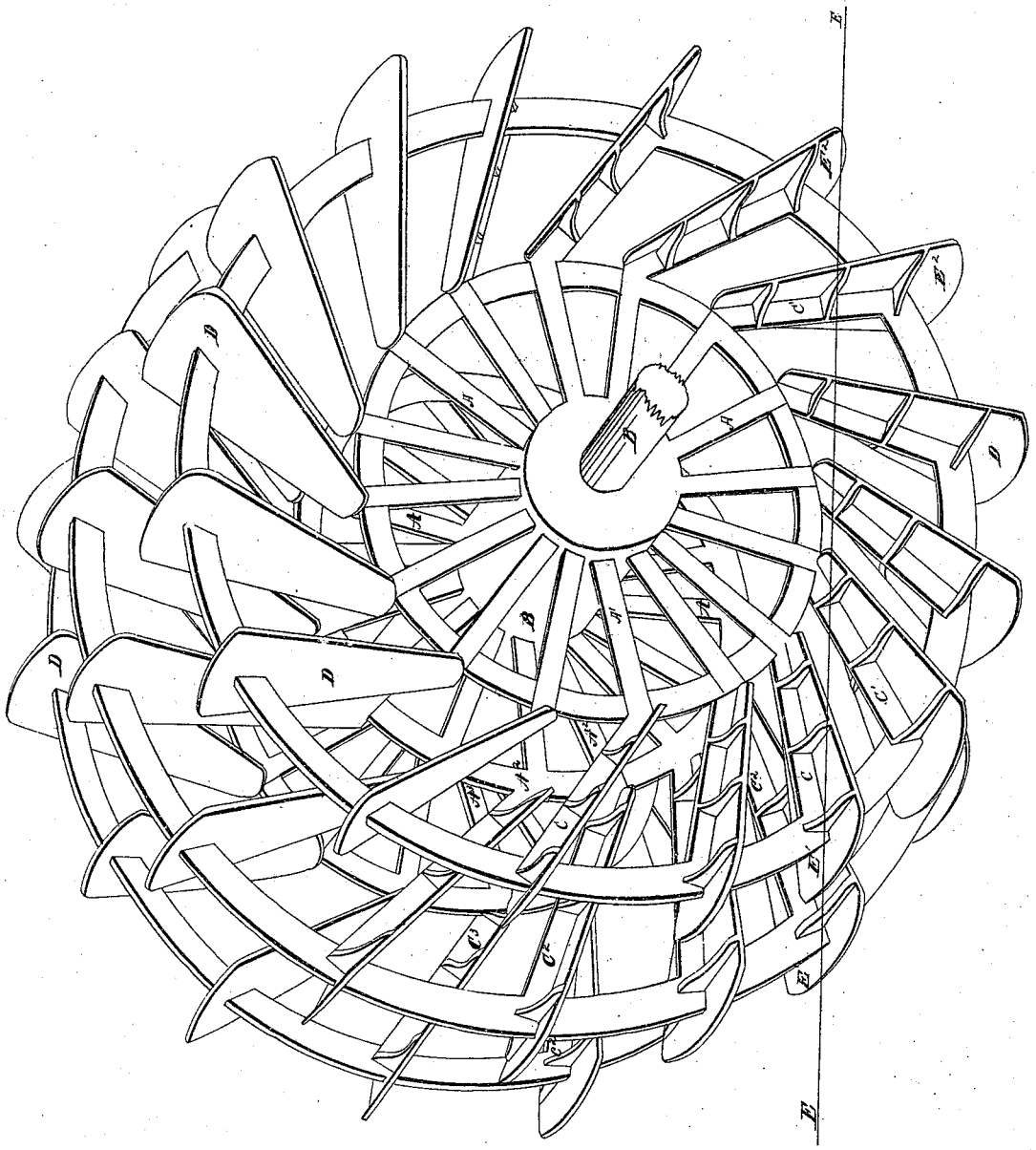
M. W. King.
Paddle Wheel.

No. 1,473. Patented Jan. 15, 1840.



UNITED STATES PATENT OFFICE.

MATTHEW W. KING, OF NEW YORK, N. Y.

IMPROVEMENT IN PADDLE-WHEELS FOR PROPELLING STEAM AND OTHER BOATS.

Specification forming part of Letters Patent No. **1,473**, dated January 15, 1840.

To all whom it may concern:

Be it known that I, MATTHEW W. KING, of the city of New York, in the State of New York, have invented an Improvement in the Manner of Constructing Propelling-Wheels to be Used for Propelling Steamboats, Ships and other Vessels; and I do hereby declare that the following is a full and exact description thereof.

In the ordinary propelling or paddle wheels the planes of the buckets are, when fixed on the arms, in the plane of the radii of the wheels, and the paddles in consequence enter and leave the water at the same angle with its surface; but in my wheel I adopt the plan of placing the buckets so that they shall form an angle with the arms or radii of the wheel of from twenty to forty-five degrees, (more or less) in such way as that the revolution of the wheel shall cause the propelling-faces of the buckets to form an angle with the surface of the water much more acute than when their planes are in the radii of the wheel, and to leave it at an angle much more nearly approaching a right angle than under the ordinary plan. I am aware that the buckets of paddle-wheels have been previously so placed, and although I adopt this plan I do not claim it as constituting any part of my invention. I use three or more arms in the width of the wheel, each arm carrying a separate paddle or bucket. These arms are shown at A′, A^2, and A^3 in the accompanying drawing, and at C′, C^2, and C^3, the latter being the parts of the arms to which the separate angular buckets D D are attached. B B is the ordinary shaft of the wheel. The buckets D D, I do not place so as to range with each other—that is to say, the buckets on any three or more of the arms do not stand in the same plane, and do not, therefore, strike the water at the same time; but I generally so place them as that only one shall meet the water in any one instant, and in all cases taking care that not more than two shall do so. As represented in the drawing, the two outer series of buckets are in the same plane and the center series intermediate between them. When three sets of arms only are used, I make the arms of the center series one, two, or more feet longer than those of the side series. If four sets of arms and buckets are employed, the two middle series are in like manner lengthened, and so of any greater number of arms and paddles, thus increasing the diameter of the wheel at the center. The paddles I make rounding at their outer ends, as shown in the drawing, and this rounding, together with the projection of the center rows of paddles, will, in concurrence with the not placing of the respective rows of paddles in the same plane, cause them to enter the water with greater ease, producing less commotion than when otherwise constructed.

Having thus fully described the manner in which I construct my paddle-wheel, what I claim therein as constituting my invention is—

The placing a separate bucket on three or more consecutive rows of arms, the making of the center arms longer than those toward the sides, so as to increase the diameter of the wheel toward the center, and the giving to the end of each bucket a rounding form, as represented, by which it strikes upon the water more easily and quietly than when made square.

MATTHEW W. KING.

Witnesses:
THOS. P. JONES,
GEORGE WEST.