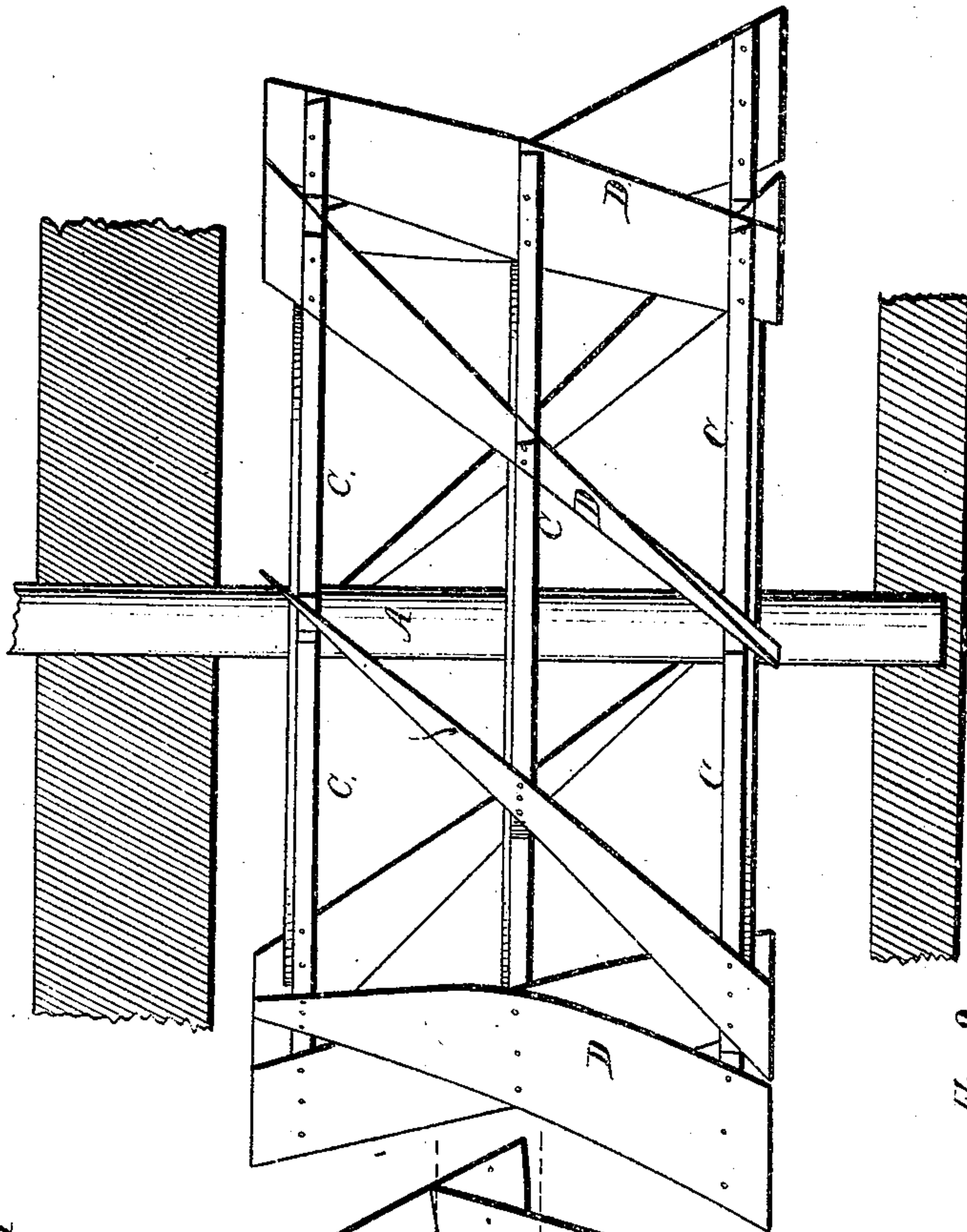


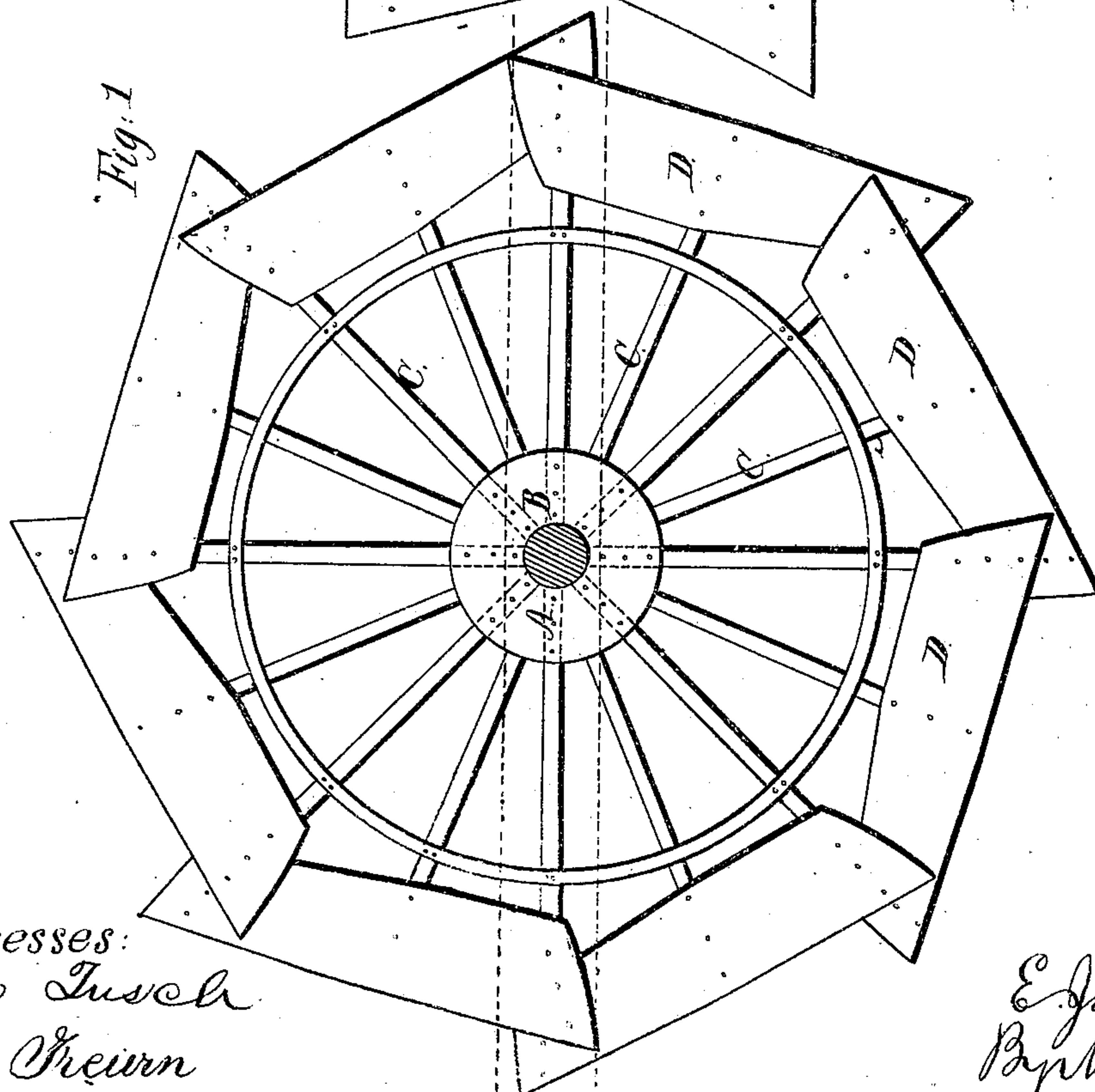
*E. Jones.*  
*Paddle Wheel.*

*Nº 53,008.*

*Patented Mar. 6, 1866.*



*Fig. 2.*



*Fig. 1*

*Witnesses:*  
*Thos. Tusch*  
*Wm. Crewn*

*Inventor:*  
*E. Jones*  
*By H. M. Cull*



# UNITED STATES PATENT OFFICE.

EDWARD JONES, OF SAN FRANCISCO, CALIFORNIA.

## PADDLE-WHEEL.

Specification forming part of Letters Patent No. 53,008, dated March 6, 1866.

*To all whom it may concern:*

Be it known that I, EDWARD JONES, of San Francisco, in the county of San Francisco and State of California, have invented a new and Improved Paddle-Wheel; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of my invention; Fig. 2, a plan or top view of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and useful improvement in paddle-wheels for propelling boats and vessels more efficiently and without the loss of power, the expense, and wear and tear incident to the wheels now in general use.

A represents a wheel-shaft having upon it, firmly keyed or otherwise secured, three or more hubs, B, provided with radial arms C, which are out of line with each other in a direction longitudinal with shaft A, but in line with each other at an angle of about forty-five degrees therewith. (See Fig. 2.) This line of the arms forms an acute angle with the side of the boat facing the bow, and an obtuse angle at the opposite or rear side.

The inner edges of the inside arms, C—that portion where the floats must find a bearing—are slanted or brought to the proper bevel-angle of about forty-five degrees, and the outside edges of the corresponding outside arms are also slanted or brought to the aforesaid proper bevel-angle with a gradual tapering or falling off to the ends of said arms or spokes of about two inches to every foot of breadth of the blade at the outside. The ends of the arms should not project beyond the lower edge of the floats, but be cut tapering from them.

The center arms have such a bevel and taper on their outside edges as will afford the desired bearing for the floats in their central position, the ends of said center arms being also cut tapering from the floats.

The floats D are affixed or fastened to the

arms C, when set and prepared as aforesaid, as follows: The floats are laid through the entire breadth of the wheel at the aforesaid angle, (about forty-five degrees,) acute to the line of progression, the floats being secured so that their upper edges shall be equidistant from the axis of the wheel or parallel with the surface of the water, and in a straight or right line. The floats increase in width about one-fifth from their inner to their outer ends, the increase being gradual and convex, and on the lower edge, (see Fig. 1,) the ends being also convex, increasing to the lower edge. The floats thus affixed to the arms will present an oblique concavity running from the outer edge on the inside to the inner edge on the outside, and a slight general longitudinal convexity, and the floats will project well beyond the arms.

The peculiar twist or curves and lines belonging to this float must be produced before the floats are affixed to the arms, whether the same be made of wood or iron.

It will follow, as a matter of necessity, that the outside arms are as much longer than the inside arms as the floats are wider at that point than on the inside.

This wheel, though soft in its action, exercises, nevertheless, a far more effective propelling power than the wheel in general use. It saves the power which is lost in the violent percussion which is inseparable from a rapid perpendicular action against the water. It does not, therefore, cause that concussion and vertical vibration so destructive to the boat and inimical to her speed. The boat is also free from the heavy and retarding friction of the back-water.

Concentration of power and pressure takes place at the outer ends of the floats, as it is with the wings of a bird or the blades of the oar, from which it is directly transferred to the shoulder of the shaft next the boat. The floats, being free from the impediments of percussion and lift, enter the water propelling and leave the water propelling.

The wheel has the action of the oar at its best angle, with a steady and continuous pressure, and is constantly reaching into undisturbed water, and admits of more rapid revo-

lution with more surface of float, giving greater speed with less steam-power and less fuel than the wheel in general use.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A paddle-wheel provided with floats convex on their outer edges and increasing in

width toward the outer ends, arranged relatively to the wheel-shaft and to the sides of the vessel substantially as described and represented.

EDWARD JONES.

Witnesses:

R. O. STURDIVANT,  
JAMES HAYDEN.