

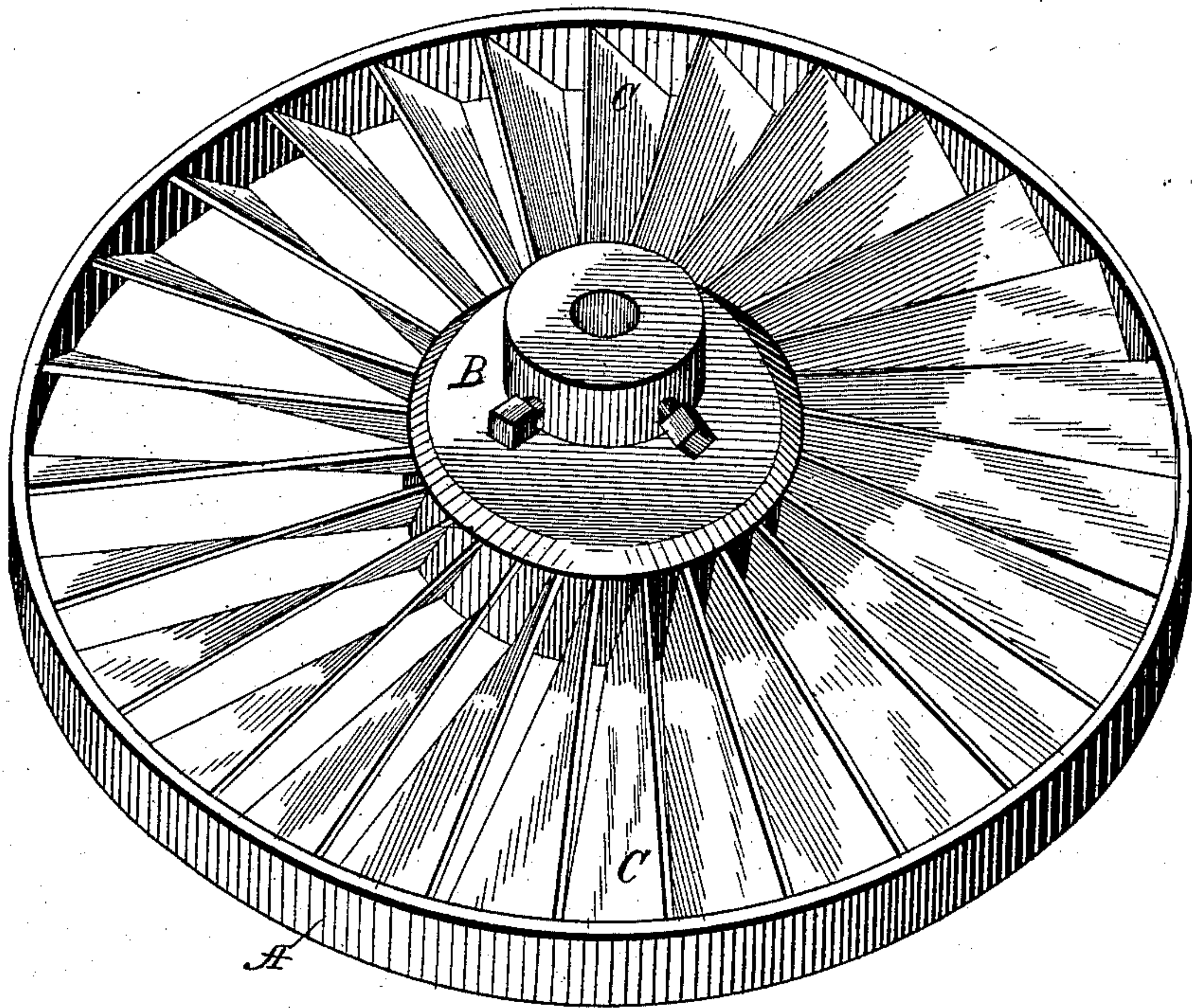
(No Model.)

C. M. BAKER.  
TURBINE WATER WHEEL.

No. 277,535.

Patented May 15, 1883.

*Fig. 1.*



WITNESSES:

*Ad. L. Dieterich*  
*John G. Hinkel*

INVENTOR,

*Cyrus M. Baker*  
By *James H. Mandeville*  
ATTORNEY



# UNITED STATES PATENT OFFICE.

CYRUS M. BAKER, OF WEST WATERTVILLE, MAINE, ASSIGNOR OF ONE-HALF  
TO JAMES H. MANDEVILLE, OF WASHINGTON, D. C.

## TURBINE WATER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 277,535, dated May 15, 1883.

Application filed September 20, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, CYRUS M. BAKER, a citizen of the United States, residing in West Waterville, in the county of Kennebec, in the State of Maine, have invented a new and useful Improvement upon Turbine Water-Wheels, of which the following specification and its drawing is a full, clear, and exact description.

In the construction of a water-wheel it is first necessary to consider how to use the water to the best advantage, and then the durability of the wheel and its cost of manufacture. It is desirable so to build a wheel that any amount of water can be applied to it without creating any back-pressure to impede its revolutions; to make a shoal wheel in order to have the top of it as far below the head or surface of the water in the flume or dam as it is possible to set the wheel and have it discharge its water freely; to economize water by having a wheel that vents less water as the labor is increased which is performed by the wheel; to have a small wheel which will vent a large amount of water, always having each pound of water to perform one pound of labor with equally as good an effect upon the machinery as the weight of the water would effect the machinery when driven by a wheel of larger diameter—that is to say, to secure with a small wheel the same advantage over the machinery or the labor to be performed that can be secured by a larger wheel—and so to construct the floats or blades that a pound of water will have the same effect upon the wheel at any distance from its center, thus equalizing the pressure of the water for the entire length of the floats.

This invention consists in twisting the floats or blades for their entire length from a perpendicular position at the center of the shaft (if it were possible to extend them in so far) to

an angle of forty-five degrees at the circumference of the wheel.

The drawing shows a wheel in perspective embracing my invention.

A represents the rim of the wheel, B the hub, and C the floats or blades. If these blades were made without a twist, and then set into the wheel upon any angle, the effect would be that the water nearest the hub would tend to drive the inner portion of the wheel faster than its outer portion, causing a gradual increase in the waste of water from the hub to the circumference of the wheel, where some of the water would flow through the wheel without performing any labor; but by twisting the blades, as shown, the water acts upon them with a wedge purchase, which increases inwardly toward the hub, and the circumference of the wheel is rotated just as many feet a second as it would be rotated provided the water was applied nearer the circumference of the wheel than the hub. Although the water is applied upon the entire length of the floats, yet a jet of water applied near the hub will have the same effect—will rotate the wheel just as fast and just as strong—as it would if applied near the circumference of the wheel.

I claim—

A water-wheel float or blade twisted for its entire length from a perpendicular at the center of the shaft to an angle of forty-five degrees at the circumference of the wheel, substantially as herein shown and described.

In testimony whereof I hereunto subscribe my name, in presence of two attesting witnesses, this 4th day of September, A. D. 1882.

CYRUS M. BAKER.

Witnesses:

CHANDLER BAKER,  
LUCINDA R. BAKER.