

No. 744,539.

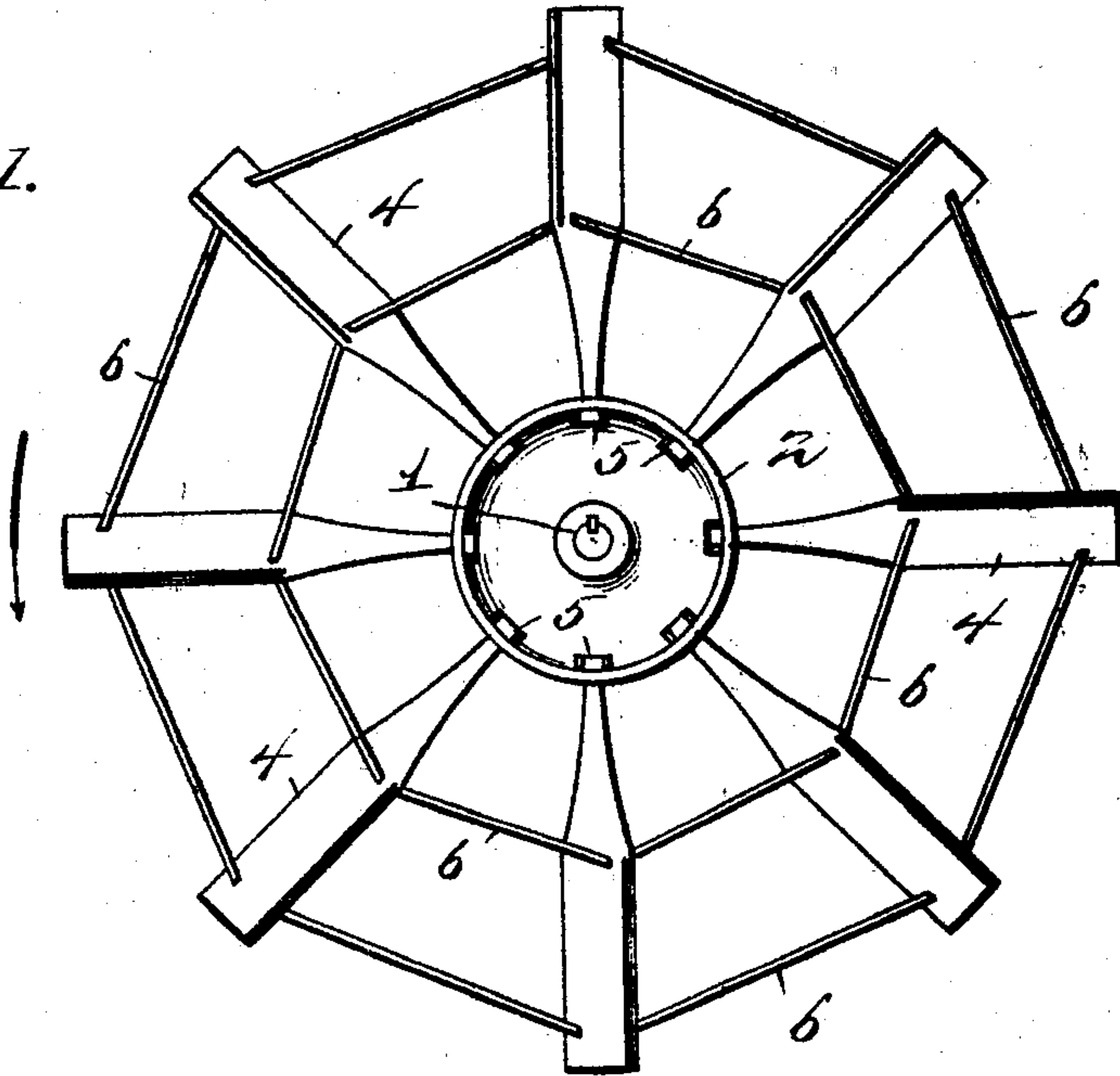
PATENTED NOV. 17, 1903.

G. L. HAMLING.  
PADDLE WHEEL.

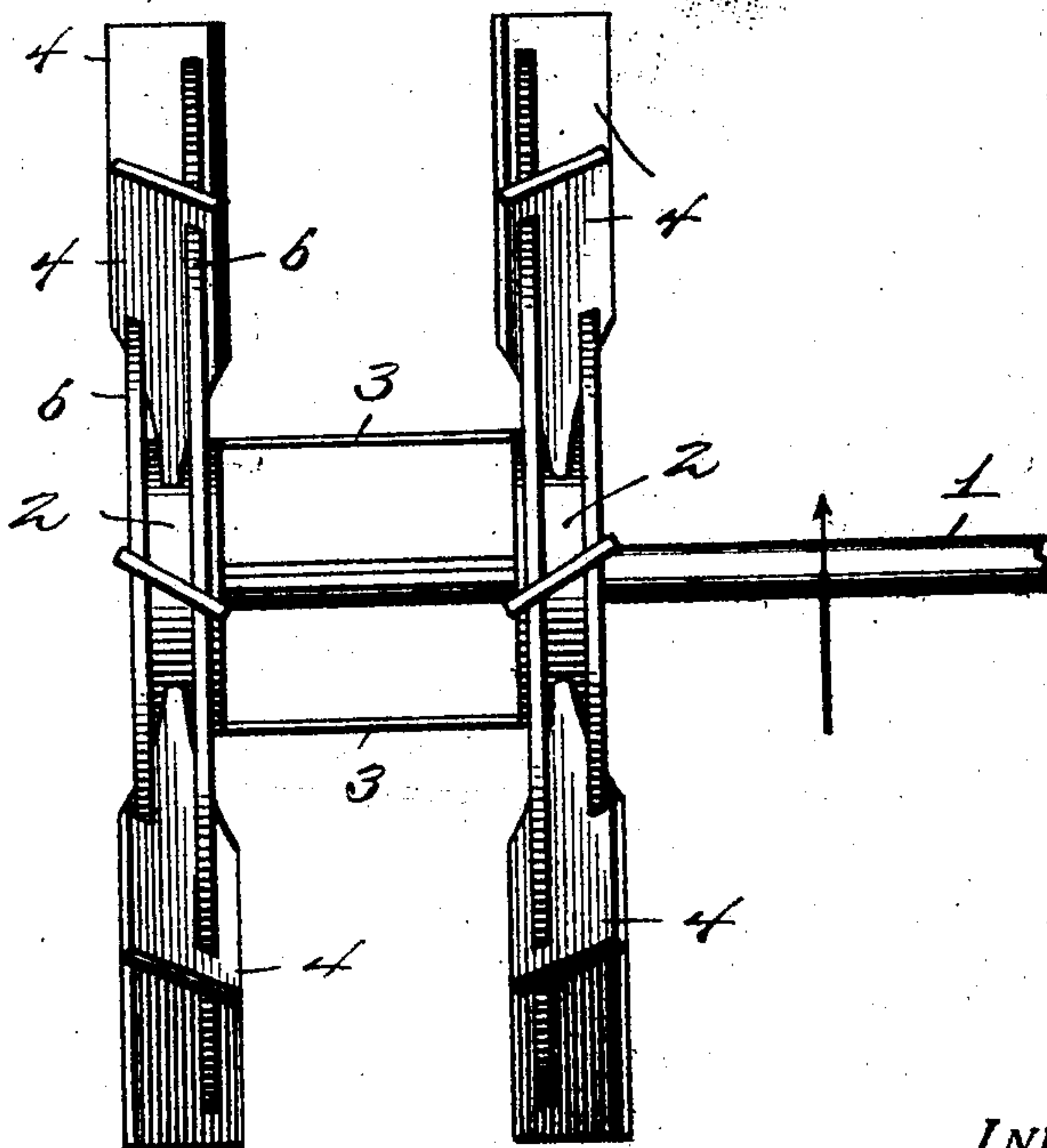
APPLICATION FILED JUNE 6, 1903.

NO MODEL.

*Fig. 1.*



*Fig. 2.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE L. HAMLING, OF FARMINGTON, DELAWARE.

## PADDLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 744,539, dated November 17, 1903.

Application filed June 6, 1903. Serial No. 160,425. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE L. HAMLING, a citizen of the United States, residing at Farmington, in the county of Kent and State of Delaware, have invented new and useful Improvements in Paddle-Wheels, of which the following is a specification.

My invention relates to new and useful improvements in paddle-wheels for use in propelling boats.

An object is to provide a wheel of simple, inexpensive, and durable construction, which overcomes the vibration incident to the use of propellers and which is capable of propelling a boat at high speed.

With the above and other objects in view the invention consists in providing a wheel comprising a hub, in the opposite ends of which are arranged detachable blades. These blades are so inclined that when revolved the water contacted thereby will be forced toward the center of the wheel. As a result all vibration, such as occurring by the use of ordinary propellers, is dispensed with, and by packing or forcing the water toward the center of the wheel a high speed can be attained by the use of this wheel.

The invention also consists in the novel construction, combination, and arrangement of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is an end elevation, and Fig. 2 is a side elevation thereof.

Referring to the figures by numerals of reference, 1 is a shaft to which are secured drums 2, the inner ends of which are connected by cross-strips 3. These drums and strips form the hub of the paddle-wheel and are adapted to rotate with the shaft 1. Blades 4 extend from each drum 2, and the inner ends

of these blades are reduced in thickness and are inserted in apertures in the drums and locked in such positions by means of nuts 5 or other suitable devices. The two series of blades are oppositely inclined and are adapted to be held in proper relation to each other by means of bands 6, which are secured to the blades in any desired manner.

It will be understood that when the paddle-wheel is rotated in the direction indicated by the arrows in Figs. 1 and 2 the water contacted thereby will be forced inward to points between the two series of blades, where it will be packed and increase the resistance offered to the rotation of the paddle-wheel. Moreover, as the water is thrown in opposite directions by the two series of blades no vibration will result, as is the case where the water is thrown in the same direction by all of the blades. The wheel is extremely simple and inexpensive in construction, and should any one of the blades become broken or worn it can be readily replaced by detaching it from the bands 6 and removing the securing means at its inner end.

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

In a paddle-wheel the combination with drums and strips connecting the same, of series of oppositely-inclined blades extending from the drums, means for detachably securing the blades to the drums, and bracing-bands connecting the blades.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE L. HAMLING.

Witnesses:

W. W. REDMAN,  
CHARLES B. PORTER.