

BENJAMIN REDDING.

Improvement in Water Wheels.

No. 121,472.

Patented Dec. 5, 1871.

Fig. 1.

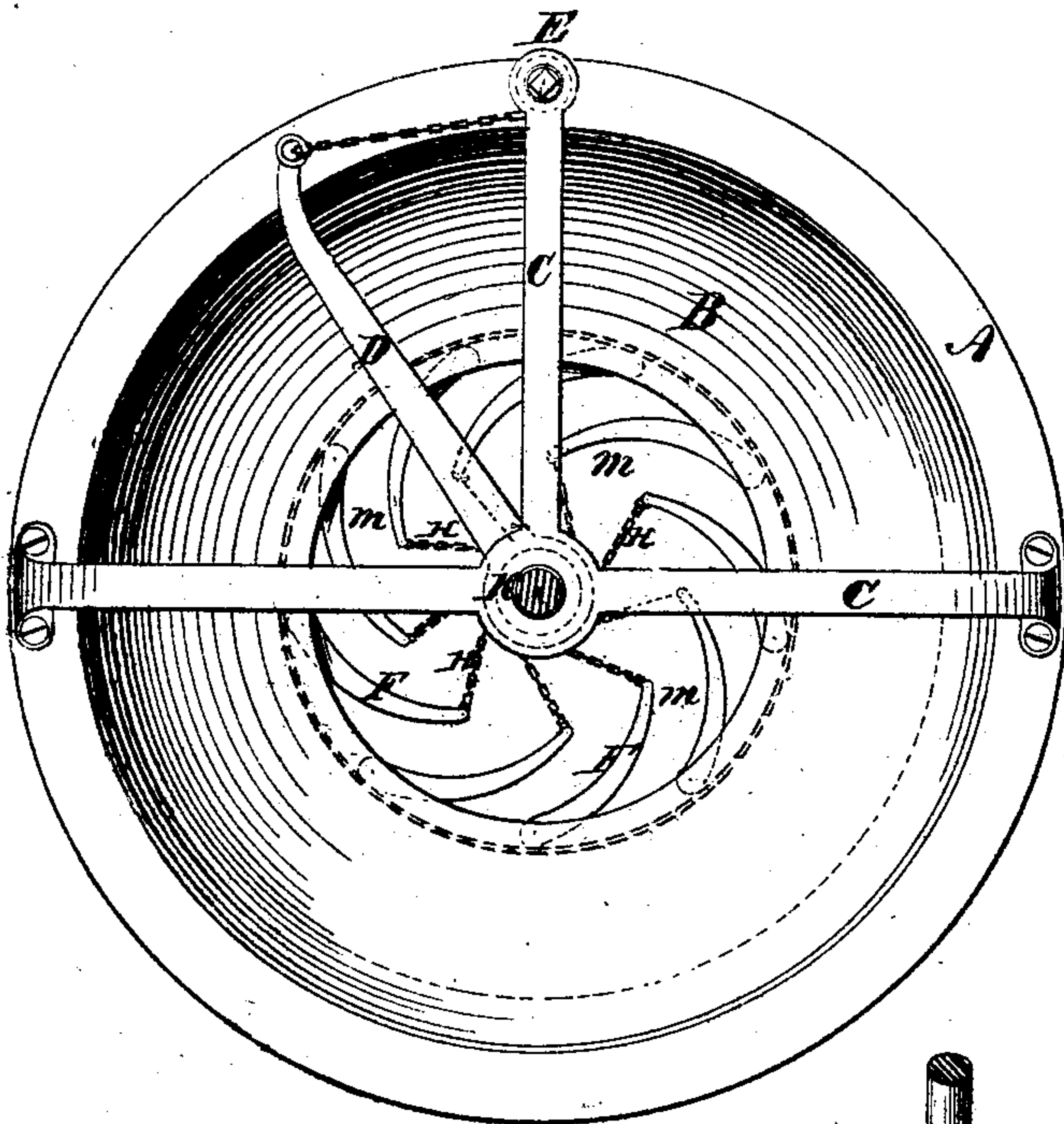


Fig. 2.

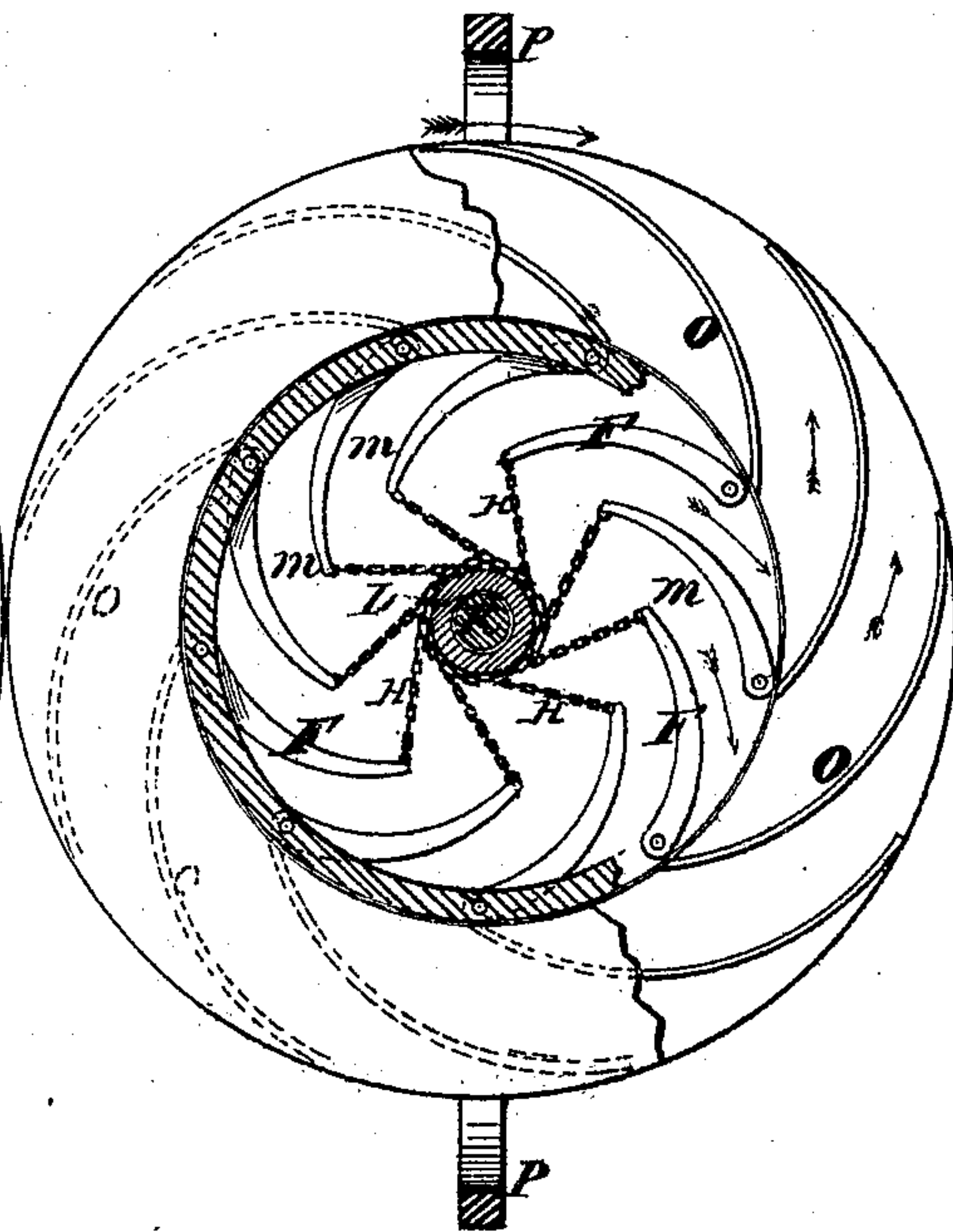
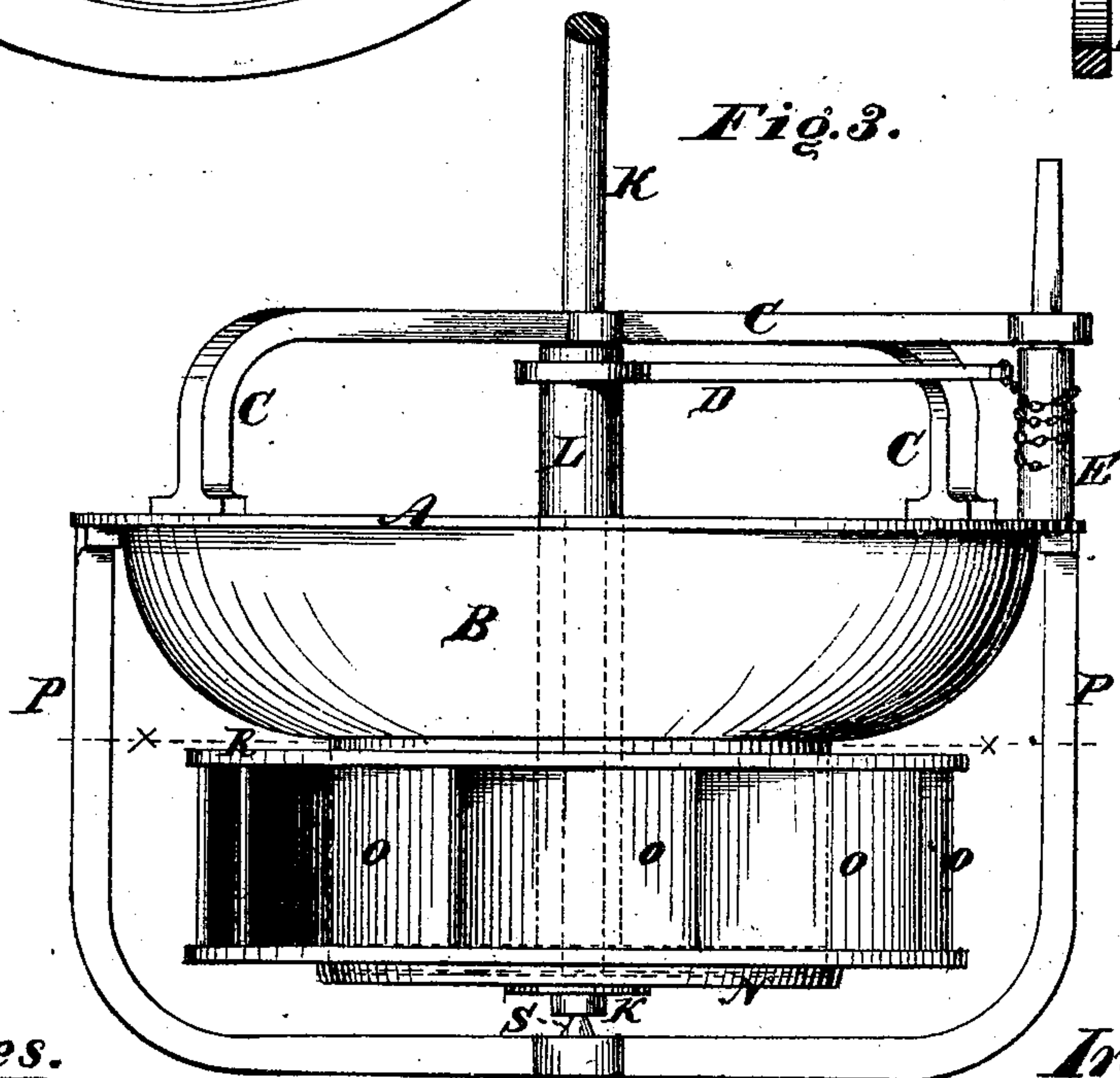


Fig. 3.



Witnesses.

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BENJAMIN REDDING, OF KENTVILLE, ASSIGNOR TO DAVID M. DICKIE, OF CAN-
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IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. 121,472, dated December 5, 1871.

To all whom it may concern:

Be it known that I, BENJAMIN REDDING, a subject of the Queen of Great Britain, residing in Kentville, in the county of Kings, Province of Nova Scotia, Dominion of Canada, have invented a certain Water-Wheel for Driving Machinery by Water-Power, of which the following is a specification:

The first part of my invention relates to a hollow cylinder having a stationary bottom and hinged sides in combination with a barrel and chains placed in the center of the wheel; the object being to admit the water to the wheel through the cylinder, the hinged sides of the cylinder forming gates when closed and when open being guides to properly direct the water against the buckets; or those guides may be stationary and the usual gate placed in the flume. The second part of my invention relates to a hollow wheel to admit the cylinder, as above, having curved buckets and sunken bottom, with a flat upper rim so arranged that the water may be admitted through the cylinder and act on all the buckets at the same time.

Figure 1 is a perpendicular view of the REDDING water-wheel. Fig. 2 is a perpendicular view of that section below the dotted line *x x* in Fig. 3. Fig. 3 is a side view.

A is the outer rim, to be attached to the bottom of the flume. B is the stationary part of the wheel, made dishing or beveling, attached to the rim A and the bottom M of the cylinder. C are cross-pieces attached to A to support the shaft K. D is a lever attached to the barrel L. E is a barrel attached to D by a chain. F F are the sides of the cylinder, made in sections, secured at one end to B and M by a bolt, which makes a hinge, and at the other end by chains H H to the barrel L; or they may be made stationary in the position shown in Fig. 1. They are used, if stationary, to turn the water direct against the buckets O O; if attached, as shown, for the additional purpose of regulating the amount of water used, and for closing the water off entirely. H H are chains attached to the barrel L and gates F F. K is the upright or driving-shaft attached to the center of N, the revolving part of the wheel, and by which mo-

tion is conveyed to any machinery that is properly attached. L is a barrel outside the shaft K. M is the stationary bottom of the cylinder in the center of the wheel, attached to B by the bolts that form the hinges of the gates F F, and hold the weight of the water. N is the bottom of the rotating part of the wheel, and is attached at the center to the shaft K. O O are curved buckets, stationary between the bottom N and the upper rim of the revolving part of the wheel. P is a frame attached to A, and which holds a step, S, on which the upright shaft K stands. R is the upper rim of the revolving part of the wheel, made open in the center to admit the cylinder. S is a step on the frame P, to hold the end of the shaft K.

The mode of operating the wheel is as follows: Place the wheel in the bottom of the flume so that the water in the lower part of the stream will cover the revolving part of the wheel and the water in the flume will stand in and above the cylinder, turn the barrel E so that the chain attached will draw the lever D, which will move the barrel L, which, with the chains H H, will draw the ends of the gates F F toward the center of the cylinder and allow the water in the cylinder to run against the buckets O O, which will cause the revolving part of the wheel to turn the shaft K, which will carry machinery properly attached.

This wheel may be attached to the side of the flume, in which case the shaft K may project through a bearing at S and have a crank attached to the end.

What I claim as my invention is—

A hollow cylinder for admitting the water to the wheel, having a stationary bottom and hinged sides, which answer for gates when closed and for guides when open, in combination with the barrel and chains for opening the gates, and a revolving wheel, open in the center, to admit said cylinder, for the purposes hereinbefore set forth.

August 22, 1871.

BENJAMIN REDDING.

Witnesses:

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