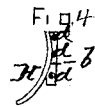
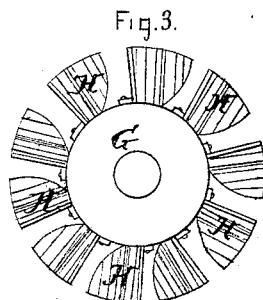
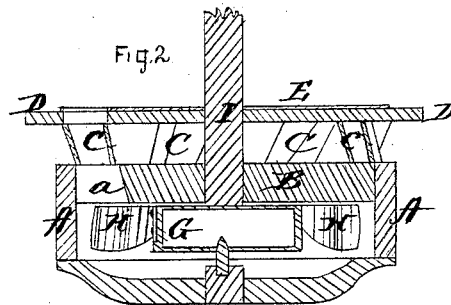
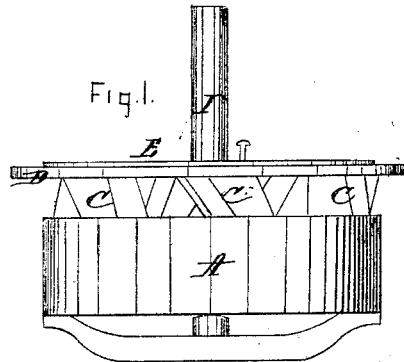


JOHN L. KURTZ.

Improvement in Water-Wheels.

No. 114,154.

Patented April 25, 1871.



Witnesses.  
for W. Hutchinson  
C. L. Kurtz.

Inventor.  
John L. Kurtz  
per  
Alexander Mason  
Attys

# United States Patent Office.

JOHN L. KURTZ, OF YORK, PENNSYLVANIA.

Letters Patent No. 114,154, dated April 25, 1871.

## IMPROVEMENT IN WATER-WHEELS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, JOHN L. KURTZ, of York, in the county of York and in the State of Pennsylvania, have invented certain new and useful Improvements in Water-Wheels; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a "water-wheel," as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side elevation, and

Figure 2 is a longitudinal vertical section of the entire wheel and casing;

Figure 3 is a plan view of the wheel proper; and

Figures 4 and 5 are views of the buckets.

A represents the casing, within which the wheel works.

This casing is open at the bottom, and provided with a head, B, at the top.

In this head is a series of openings, *a a*, through which the water is admitted from the conductors C C to the inside of the casing.

These conductors are attached at their lower ends in the openings *a a*, and their upper ends are attached in similar openings in the platform D, but the conductors are not placed vertically; they are placed at a certain angle, as shown in figs. 1 and 2, and the openings *a a*, in the casing-head B, are inclined so as to correspond with said angle.

On top of the platform D is placed a plate, E, provided with a series of openings corresponding with the openings in the platform, and said plate can be turned so as to entirely shut off the water or to let on more or less as may be desired.

The wheel proper is composed of a hollow cylinder, G, on the outer circumference of which the buckets H H are attached, by means of a flange, *b*, on the bucket, and bolts *d d*, or rivets, as shown in figs. 4 and 5.

The buckets H H are curved, as shown in fig. 4, this curvature being such that the water coming down from the inclined conductors C C will strike the buckets nearly at right angles with them; or, in other words, the direction of the water will be nearly at right angle with the bucket at the point where the water strikes it.

The lower edges of the buckets are also curved, making the outer edge much longer than the inner, and the surface of the outer half of each bucket much larger than that of the inner half.

The spindle I of the wheel passes up through the centers of the head B, platform D, and plate E.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

The combination of the casing A, head B, conductors C C, platform D, plate E, wheel G H, and spindle I, all constructed and arranged substantially as herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 1st day of March, 1871.

JOHN L. KURTZ.

Witnesses:

A. N. MARR,  
C. L. EVERT.