L. D. Adkins,

Water Wheel,

No. 1,154. Patented May 17, 1839.

Fig. 1.

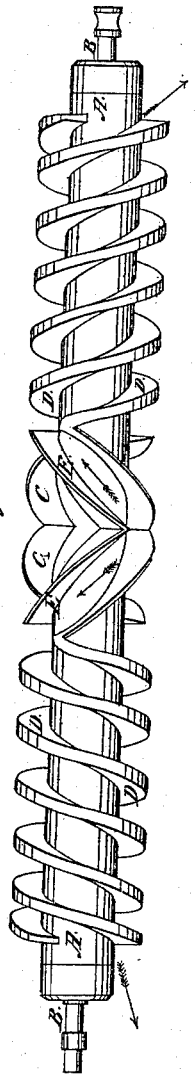


Fig. 4.

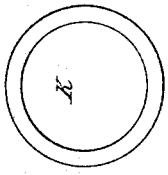


Fig. 3.

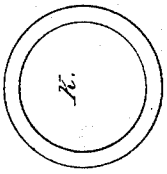
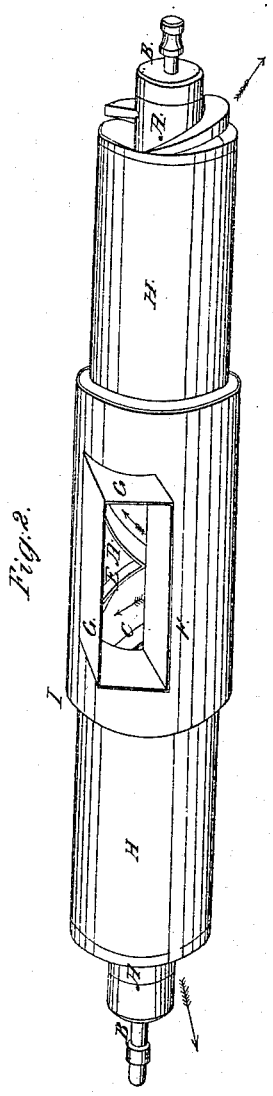


Fig. 2.



UNITED STATES PATENT OFFICE.

LORENZO DOW ADKINS, OF PERRY TOWNSHIP, WAYNE COUNTY, OHIO.

SPIRAL-BUCKET WATER-WHEEL.

Specification of Letters Patent No. 1,154, dated May 17, 1839.

To all whom it may concern:

Be in known that I, LORENZO DOW ADKINS, of Perry township, State of Ohio, have invented a new and useful Horizontal Spiral-Bucket Wheel for Propelling Mills and other Machinery, which is described as follows, reference being had to the annexed drawings of the same, making parts of this specification.

Figure I, represents the horizontal water wheel detached from the bulkhead and cases surrounding it. Fig. 2, the exterior of the cases and bulkhead surrounding the wheel. Figs. 3 and 4, rings of packing inserted between the bulkhead, and cases to render the joints water tight.

This wheel consists of a cylindrical shaft A of any convenient length and diameter placed in a horizontal position, having gudgeons B, turning in boxes supported on a suitable frame. From the middle of this shaft, on the periphery thereof diverge to the right and left, curved buckets C, extending around the shaft about one third of its circumference, forming a figure nearly resembling a V, from the extremities of which V-shaped buckets extend spiral buckets D in a reverse direction to the buckets C C in a spiral direction in the manner of the Archimedean screw, one of the buckets winding to the left to one end of the shaft and the other bucket winding around to the right toward the other end of the shaft; other spiral buckets shaped similar to those just described wind around the shaft in the spaces between the spiral buckets just described extending from the extremities of other V buckets similar to buckets C, C, and placed opposite—thus forming two parallel spiral buckets on each side of the center V buckets extending from the extremities thereof; in the spaces between the V buckets just described are arranged other V buckets E arranged parallel with them. These buckets do not extend as far as the spiral buckets—of course there are spaces between the ends of these V buckets E and the spiral buckets D for the passage of the water from the former to the latter. The V buckets are surrounded by a permanent circular case F, Fig. 2, fixed to any convenient part of a suitable frame having an oblong opening in one side for admitting the water to the wheel, which opening is surrounded by a straight trunk G, Fig. 2, for conveying the water to the buckets.

The case F and trunk G are termed the bulkhead.

The spiral buckets are surrounded by tight cylindrical cases H, H, for confining the water between the buckets—they are fastened to the wheel and turn with it inside the center case or bulkhead—the joints at I being secured by proper packing to prevent the escape of water at said joints, such as the ring, represented at K. Figs. 3 and 4, which are made of leather or other suitable material of a thickness sufficient to fill the spaces between the outside of the cases F F and the inside of the bulkhead, in which said cases of the wheel turn. Each of said cylindrical cases is open at both ends.

The water is conducted by the trunk G, Fig. 2, and is admitted through the opening in the side of the bulkhead, strikes the V buckets on the right and left of the center and acts by percussion in turning the wheel in the same direction that the water moves; it then acts by gravity on the lined surfaces of the spiral buckets in seeking a vent at each end to the right and left, causing the wheel to turn in the same direction and thus a continued rotary motion is given to the wheel which may be conveyed to machinery to be propelled by any of the known agencies most approved of.

This wheel may be propelled by steam as well as water. When the water is insufficient to turn the wheel, horse power may be added by means of cogged gearing.

The invention claimed and desired to be secured by Letters Patent, consists:—

1. In the arrangement of the curved V buckets C on the surface of the cylindrical shaft A at the center thereof which connect the ends of the spiral buckets winding to the right and left around the shaft in a reverse direction to said V buckets which divide the columns of water at the center of the wheel where it is admitted causing it to act on the right and left by percussion and reaction—the water escaping at each end of the wheel, as before described.

2. The arrangement of the bulkhead F for conducting water to the wheel, in combination with the cylindrical cases H, H, surrounding the spiral buckets and turning in said bulkhead for keeping the water between the buckets until it escapes at the ends of the wheel as before described.

LORENZO DOW ADKINS.

Witnesses:
JACOB MILLER,
ADAM MILLER.