

(No Model.)

J. W. KALES.
WATER WHEEL OR MOTOR.

No. 499,121.

Patented June 6, 1893.

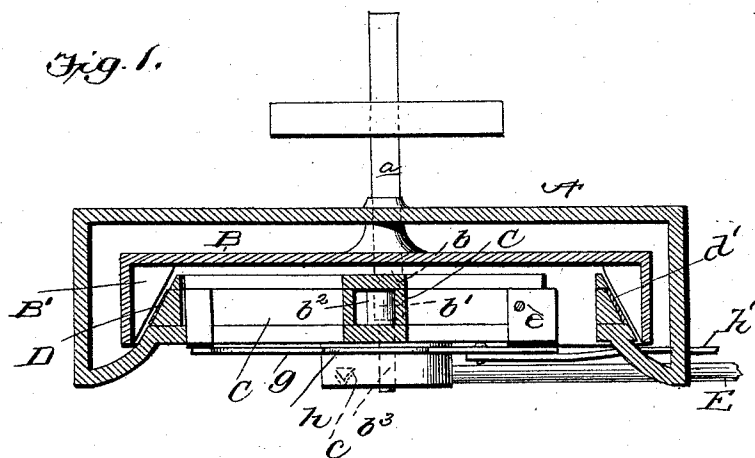
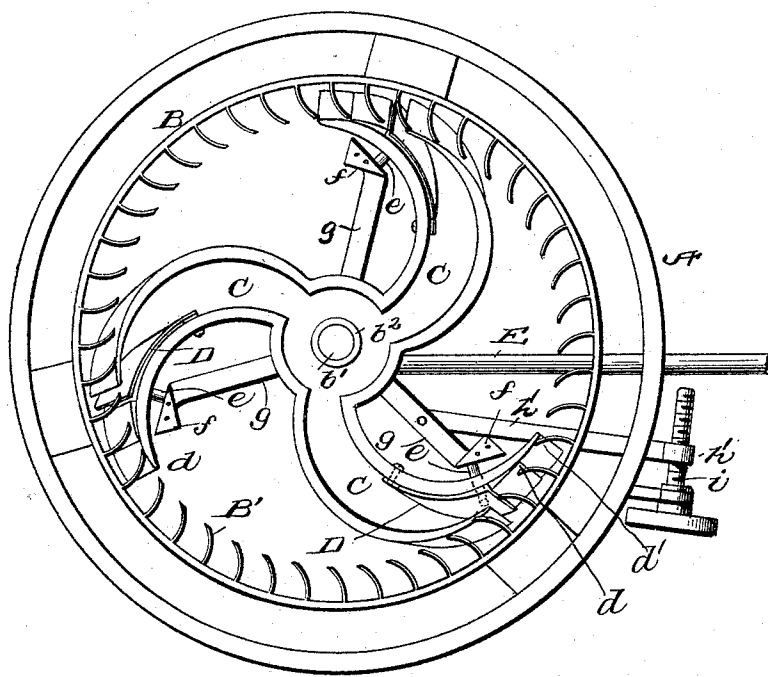


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN W. KALES, OF FRANKLINVILLE, NEW YORK.

WATER WHEEL OR MOTOR.

SPECIFICATION forming part of Letters Patent No. 499,121, dated June 6, 1893.

Application filed October 17, 1892. Serial No. 449,146. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. KALES, a citizen of the United States, residing at Franklinville, in the county of Cattaraugus and State of New York, have invented certain new and useful Improvements in Water Wheels or Motors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improved water wheel or motor more particularly of the turbine type, and it has for its object to discharge or deliver the water downward at the periphery of the wheel in a contracted stream; to vary the feeding of the water to the buckets; and to cut off the discharge of the water from the buckets when the wheel is out of operation, and to these ends the invention consists of the novel combination and construction of parts substantially as hereinafter more fully disclosed and pointed out in the claims.

In the accompanying drawings: Figure 1, is a sectional elevation of my improved water wheel or motor, and Fig. 2, is a plan view thereof.

In the embodiment of my invention, I provide a suitable housing or casing A, and within this, arrange the wheel B, whose shaft *a*, rigidly held thereto projects through the covering *b*, of the central well *c*, from which radiate the curved or arcuate chutes C, and rests upon an adjustable bearing or step *b'*, guided in a tube *b²*, and having a screw connection *b³*, with the bottom of said well, said shaft carrying a pulley for the transmission of the motor power by means of belt or otherwise to the machinery to be driven or put in motion.

The wheel B, has extending around its entire inner circumference a series of buckets B', curved or concaved in horizontal section and triangular in vertical section, with their tapering ends presented downward or at the bottom, to provide for a contracted downward discharge of the water at the periphery of the wheel.

The chutes C, are inclined or slanted at

their outer or delivering ends to coincide with the inclination of the inner edges of the buckets B', and are ground to produce a practically water-tight joint therewith and each is extended at its forward end as from *d*, to *d'*, to lap an advanced bucket in the direction of the rotation of the wheel to prevent the waste or discharge of the water when the wheel is not in operation and yet fully utilize the force of the water when the wheel is in action. The leakage of waste water remaining in the chutes, as above intimated, is prevented by the water-tight joint formed by the lapping forward end-portions thereof *d-d'*, resting closely against the co-incident buckets of the wheel.

D D are spring-metal plates or gates arranged in the delivering or outer ends of the chutes C, one being secured to the inner convex wall of each chute, at its inner end, and having its outer end resting against a stud or projection *e*, projecting through an aperture in said convex wall, and adapted to be engaged by the inclined faces of cams or knuckle-joints *f*, carried by single or compound levers or arms *g*, radial, and fast, to a ring *h*, encircling the well *c*.

The levers or arms *g*, with their cams *f*, are adapted to be operated, to force the gates or plates D, inward or outward in regulating the extent of the discharge or delivery of the chutes C, by an arm or lever *h'*, fast to one of the levers *g*, and actuated by a hand-screw *i*, suitably supported in a bracket projecting from the casing and working in said arm or lever *h'*.

E, is a pipe connected to and supplying water to the well *c*, up through its bottom, as shown, whence the water is distributed or delivered, through the chutes C, into the buckets B', for service as previously recited.

What I claim is—

1. The water motor having the curved, chutes provided with slanting or inclined outer ends in combination with the wheel having upon its inner circumference a series of buckets, triangular in vertical section, with their inclined surfaces or edges opposite the corresponding or inclined ends of the chutes, substantially as set forth.

2. In a water motor, the combination with
the chutes for delivering the water to the
buckets, of the plates or gates attached to the
inside of said chutes and having their free
5 ends resting against projections or studs pro-
jecting through the chutes, cams adapted to
engage said studs or projections and carried
by arms or levers fixed to a ring or bearing
upon the casing and adapted to be adjusted

or moved by a hand screw, substantially as is
described.

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

JOHN W. KALES.

Witnesses:

THOMAS CASE,
JAMES MCSTAY.