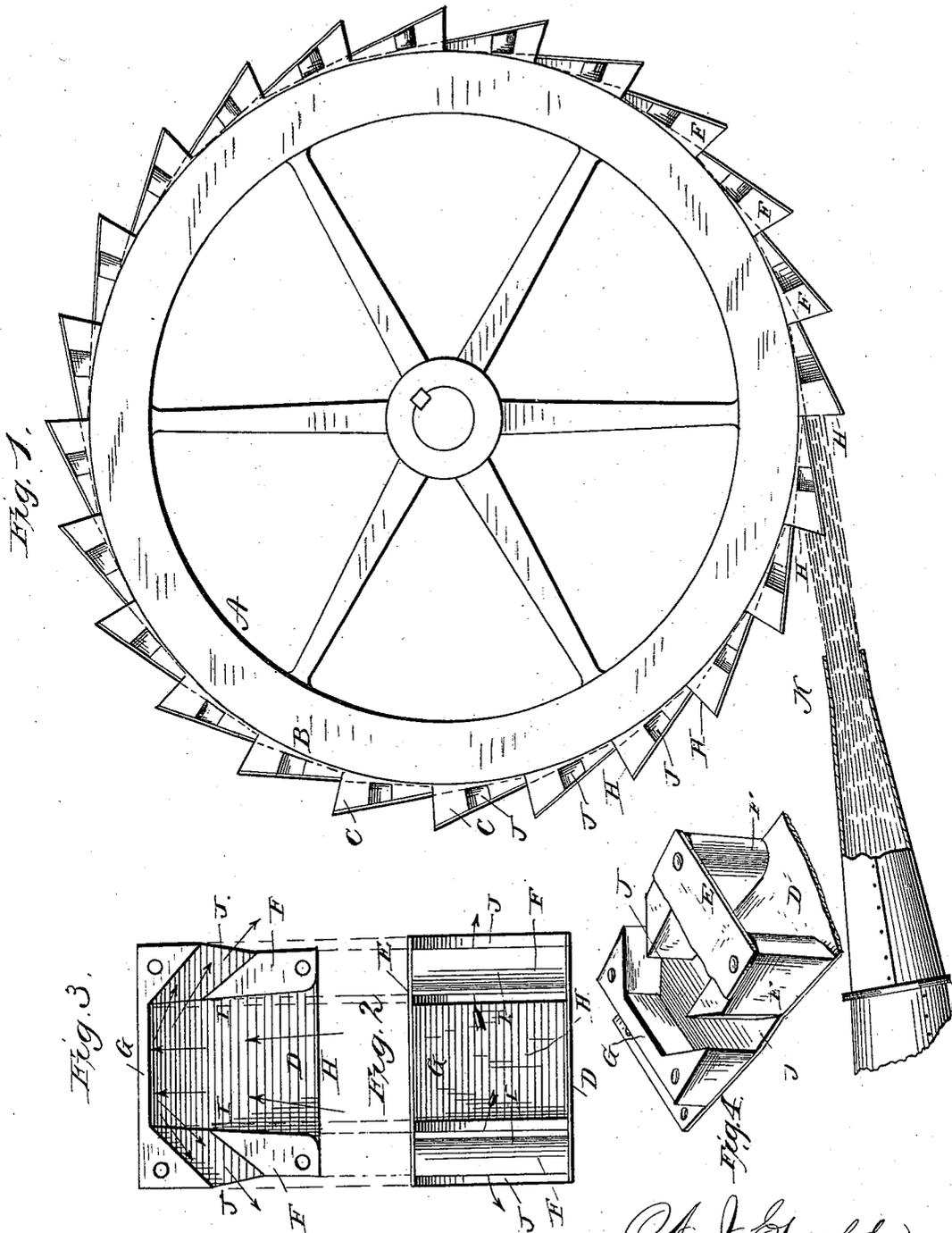


(No Model.)

A. J. GOULD.
JET WATER WHEEL.

No. 291,894.

Patented Jan. 15, 1884.



WITNESSES
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UNITED STATES PATENT OFFICE.

ANDREW JACKSON GOULD, OF QUINCY, CALIFORNIA.

JET WATER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 291,894, dated January 15, 1884.

Application filed April 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, ANDREW J. GOULD, a citizen of the United States, residing at Quincy, in the county of Plumas and State of California, have invented a new and useful Jet Water-Wheel, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to water-wheels of that class which have buckets secured on the periphery of the wheel, which buckets receive the force or impact of a stream of water under pressure from a nozzle; and it has for its object to provide a simple and efficient bucket that will effectually obviate any loss of power by back action of the water, and has an exhaust arrangement of such a construction that as the water is forced out through it the motion will be against the wheel, and the exhaust of the water will thereby aid in turning the wheel.

In the drawings, Figure 1 is a side elevation of a wheel equipped with my improved buckets. Fig. 2 is a detail end view of one of the buckets. Fig. 3 is a detail plan view of one of the buckets, illustrating the action of the water. Fig. 4 is a detail perspective view of one of the buckets detached.

Referring to the drawings, A designates the water-wheel, which may be of any suitable construction, and is arranged vertically with a horizontal axis. On the periphery B of the wheel A is arranged a continuous series of buckets, C, as shown. Each of these buckets comprises a bottom plate, D, a top plate, E, side walls, F F, and a back wall, G, its mouth H being left open, as shown. The interior faces, I I, of the side walls, F F, are preferably beveled convergently toward the back wall of the bucket; and from the said back wall outlet-openings J J are provided—one in each side wall. These outlet-openings extend through the side walls toward the mouth end of the bucket at an angle of about forty-five degrees in relation to the back wall.

K designates the nozzle, through which the jet or stream is forced against the wheel into

and against the buckets. This nozzle is arranged under the wheel on a plane horizontal to the vertical plane of the wheel.

The operation and advantages of my invention are obvious. The water enters the mouth of the bucket and comes against the back wall thereof, when it is forced out or exhausts through the openings J J at an angle to its line of entrance. By escaping in this manner at each side of the wheel, the loss of power that would result from the back action of the water is obviated, and the impact force that drives the water out through the exhaust-openings is against the wheel, by reason of the angle at which the exhaust is effected, and therefore is gained power, which assists in turning the wheel and acts continuously during the exhaust of the water. This gained power is equalized in action by having the openings of corresponding angles at both sides the bucket.

I claim as my invention—

The herein-described improved bucket for jet water-wheels, comprising the bottom D, the top plate, E, a straight back wall, G, against which the force or impact of the water comes through the opening or mouth at the front of the bucket, and the perpendicular side walls, F F, having openings J J, extending through said side walls, so that a sharp angle is formed by the straight back wall, G, and the rear wall of the openings J, the direction of said openings J J being straight and toward the mouth end of the bucket and terminating some distance in the rear of the mouth, whereby the water, as it exhausts from the openings J J, will be against the wheel the entire length of openings J J, and the exhaust will be completed at the side of the bucket in rear of the mouth, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ANDREW JACKSON GOULD.

Witnesses:

F. A. MARSTON,
J. E. WARREN.