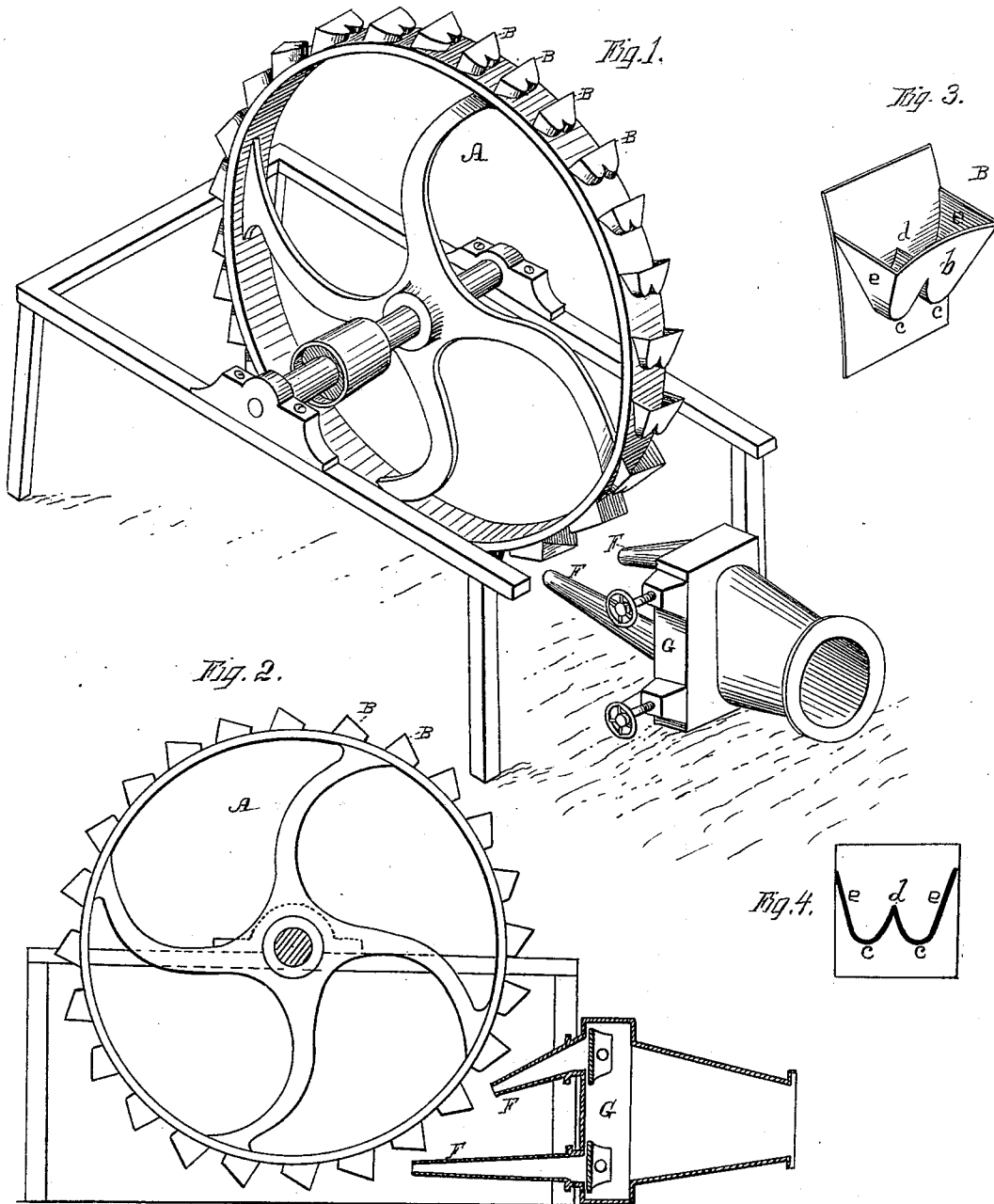


(No Model.)

L. A. PELTON.
Water Wheel.

No. 233,692.

Patented Oct. 26, 1880.



Witnesses
Frank A. Brooks
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UNITED STATES PATENT OFFICE.

LESTER A. PELTON, OF CAMPTONVILLE, CALIFORNIA.

WATER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 233,692, dated October 26, 1880.

Application filed July 3, 1880. (No model.)

To all whom it may concern:

Be it known that I, LESTER A. PELTON, of Camptonville, county of Yuba, and State of California, have invented an Improved Water-Wheel; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in that class of water-wheels known as "hurdy-gurdy" wheels, which are driven by the momentum of a stream of water delivered into buckets on the periphery of the wheel through a nozzle and under a high pressure. When the water is delivered upon flat or flat-bottomed buckets in this class of wheels it splashes and reacts against the bottoms of the succeeding buckets, thus retarding the wheel. Buckets having pointed and other shaped bottoms have been used to overcome the difficulty named, and with some success.

In my invention I construct a wheel having a flat face, and upon this face I secure peculiar-shaped buckets which are adapted to receive the stream from the nozzle and divide it, so that the two parts of the stream are directed into the curved bottoms of the two halves of the bucket, and by means of the inclined or flaring sides the two streams are caused to react and escape smoothly at each side, so that the whole reactionary force of the water is utilized, and the water is discharged clear of the wheel and the following bucket.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view of my wheel. Fig. 2 is a side elevation and section of distributing-box and discharge pipes or nozzles. Fig. 3 is a perspective view of one of the buckets. Fig. 4 is a section of the same.

A is a wheel, which may be of any suitable construction and size, and it has a rim provided with a flat face, upon which the buckets B are secured. These buckets may be formed separately, and screwed, soldered, or otherwise fastened upon the wheel-rim, or they may be formed as a part of the wheel itself, if desired. The buckets have a bottom or bottoms formed in two distinct curves, *c c*, which meet in an apex at *d*, so that when the stream of

water strikes this apex it will be divided into two parts, each of which is directed into one of the bottoms *c*. The sides *e* are continuations of the bottom, and stand at such an incline outward, that the water passes smoothly from the apex down into the bottoms, and thence up the inclined sides *e*, so as to discharge clear of the next bucket and at the sides of the wheel. This action of the water causes it to be delivered upon the wheel with the full force due to its momentum, and in passing through the curved bottom and up the inclined sides the reactionary force due to this change of direction is also added to the primary power to assist in driving the wheel.

The fronts *b* of the buckets are at such an incline or angle that the bottom is nearer the face of the wheel than the top, so that their faces will not strike the streams of water from the nozzle and thus retard the wheel; but when a bucket has arrived in line with the streams the water will instantly strike the apex *d*.

The water is brought to the wheel through a pipe or pipes, and is discharged upon it through a nozzle or nozzles, F F. In the present case I have shown a distributing-box, G, which receives the water from the main pipe and delivers it to the nozzles F. One or more of these nozzles may be employed, and they are placed tangentially to the periphery of the wheel, or so that when a bucket is in line the water will strike exactly in its center. In the present case I have shown two nozzles, and it will be manifest that more may be added at will. Each nozzle is set so as to discharge into the second bucket from the one acted upon by the previous nozzle, thus allowing each bucket to clear itself before receiving the water from another nozzle. By this arrangement I am enabled to add to the power of the wheel without increasing the area of the buckets.

The form of the buckets may be varied somewhat to obtain the best results; but the essential features of the two-part bucket with the dividing-apex, the curved bottom, and the flaring discharge sides will not be altered.

Having thus described my invention, what

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

In a water-wheel, the buckets having the curved bottoms *c*, meeting at the apex *d*, and continued to form the inclined discharge sides *e*, in combination with the bucket-front *b*, standing at an incline with the wheel-face, so that the stream from the nozzle shall be re-

ceived into the bucket without striking its face, substantially as herein described. 10

In witness whereof I have hereunto set my hand.

LESTER A. PELTON.

Witnesses:

S. H. NOURSE,
FRANK A. BROOKS.