

(No Model.)

W. H. GUNSOLUS.
WATER WHEEL.

No. 440,353.

Patented Nov. 11, 1890.

Fig. 2.

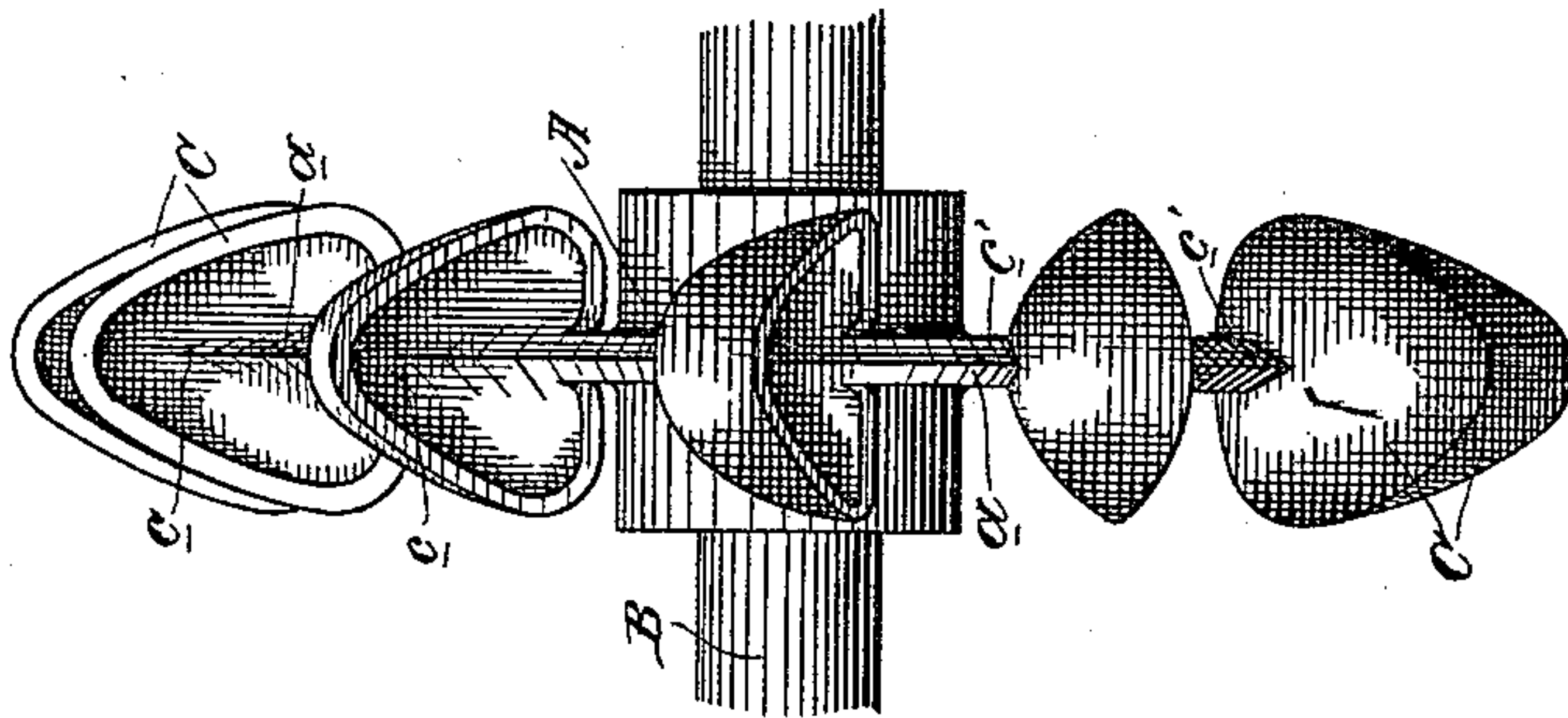
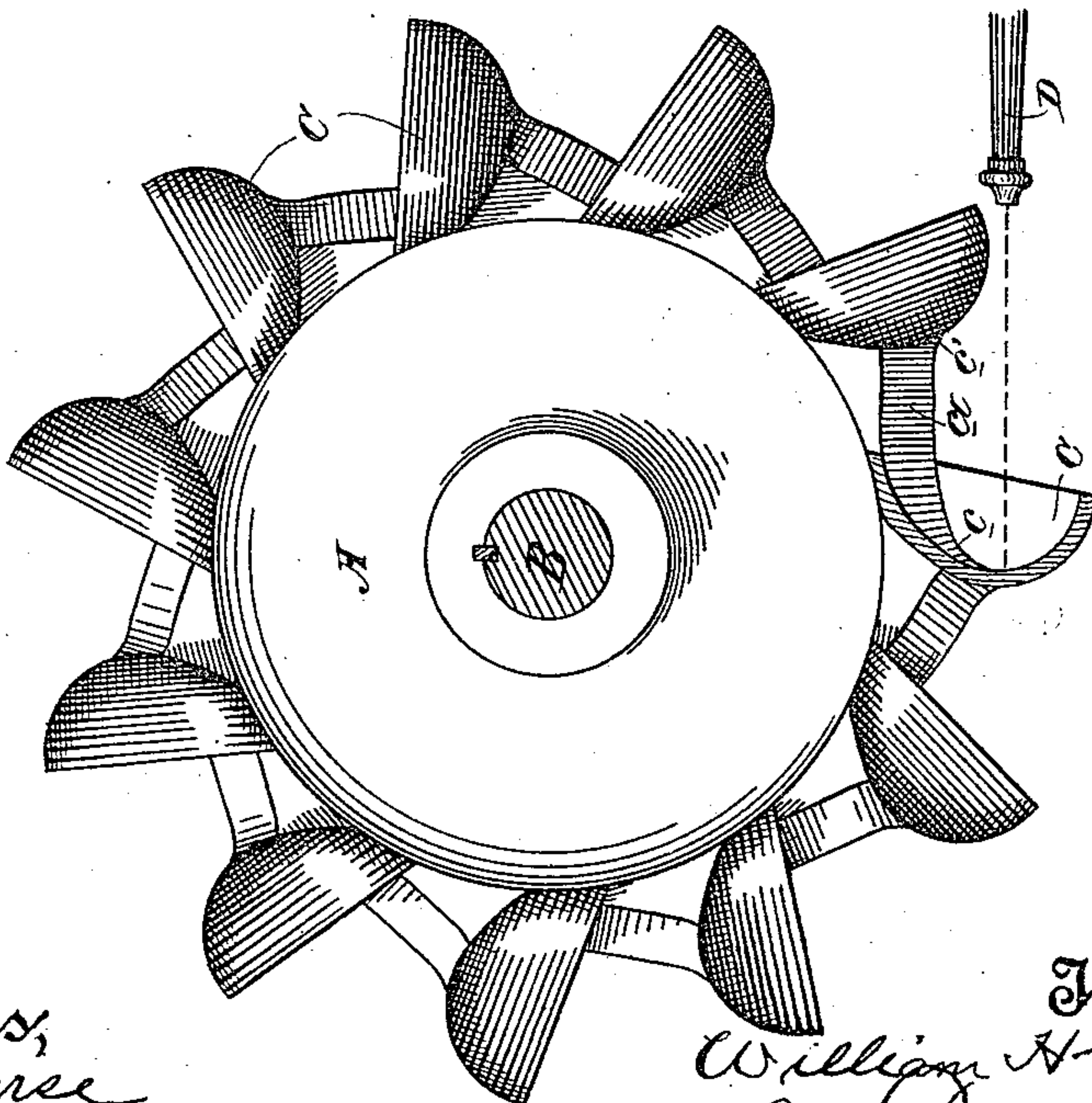


Fig. 1.



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UNITED STATES PATENT OFFICE.

WILLIAM H. GUNSOLUS, OF SUTTER CREEK, CALIFORNIA.

WATER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 440,353, dated November 11, 1890.

Application filed July 8, 1890. Serial No. 358,089. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. GUNSOLUS, a citizen of the United States, residing at Sutter Creek, Amador county, State of California, have invented an Improvement in Water-Wheels; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of water-wheels having axially-mounted frames or wheels with buckets upon their rims, which receive the impact of a stream of water delivered under pressure from a nozzle, and are commonly known as "hurdy-gurdy" wheels.

My invention consists in the novel construction of buckets hereinafter fully described, and specifically pointed out in the claims.

The object of my invention is to provide a bucket which will receive the impact of the water to the best advantage, and will discharge it equally on each side of the wheel easily and readily, and will avoid splashing and consequent interference of the discharging water with succeeding buckets.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a side elevation of my wheel. Fig. 2 is a face view.

The wheel A, which may consist of any suitable frame-work, is mounted upon an axis B. Upon the rim of the wheel are the buckets C. These have a shape which can be best expressed by the term "heart-shaped"—that is to say, they are concavo-convex vessels, the rims of which are heart-shaped, tapering outwardly and having their wide ends at the rim of the wheel. These buckets are cast with the wheel. The rim *a* of said wheel is beveled and extends into and forms a center rib for the base of the buckets, as shown at *c*, and thence extends to the back of and slightly along the adjacent bucket, forming a strengthening-rib *c'* therefor. This beveled edge forms a division in the inner or wide end of the bucket, so that the cavity of the bucket at this end lies on each side of the rim and on each side of the wheel, but this edge or division does not extend down to the point of the bucket, but terminates about half-way, leaving the lower portion of the cavity of the bucket entirely clear.

D is the nozzle by which the water under head or pressure is delivered. It is arranged

so as to direct the stream into the outer and clear portion of the bucket cavity at a point below the divisional rib *c*, and this provides for a most advantageous impact of the stream. It is not split, as is the case with those buckets which are completely divided by a rib or flange which receives the impact and splits the stream. The stream in my wheel is directed into the clear space of the bucket which receives the full impact squarely. In the discharge of the water from the bucket, however, it is divided by the rib *c*, so that it passes upon each side of the wheel, and is discharged from each side of the wide end of the bucket. In this discharge it is directed cleanly and without back splashing, so that there is no interference with the succeeding bucket.

I am aware of buckets formed in two complete parts, and also of divided buckets, made so by a complete internal rib, which receives and divides the stream, but my bucket differs from these in that it is not a two-part bucket, but is adapted to receive the full impact of the entire stream in its clear concavity and only directs and divides the discharge-water to each side.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a water-wheel, the combination, with the heart-shaped buckets, of a wheel having a rim extending from the back of one bucket into the wide end of an adjacent bucket and forming divisional rib to divide the discharging water, substantially as herein described.

2. In a water-wheel, the axially-mounted wheel having the heart-shaped buckets, consisting of concavo-convex vessels joined by their wider ends to the rim of the wheel, which said rim extends from the back of one bucket into the wide end of the adjacent bucket, and forms therein a divisional rib to divide the discharging water, leaving the outer end of said bucket with a clear concavity to receive the stream, substantially as herein described.

In witness whereof I have hereunto set my hand.

WILLIAM H. GUNSOLUS.

Witnesses:

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