

(No Model.)

A. CHAVANNE.  
WATER WHEEL BUCKET.

No. 571,510.

Patented Nov. 17, 1896.

Fig. 2.

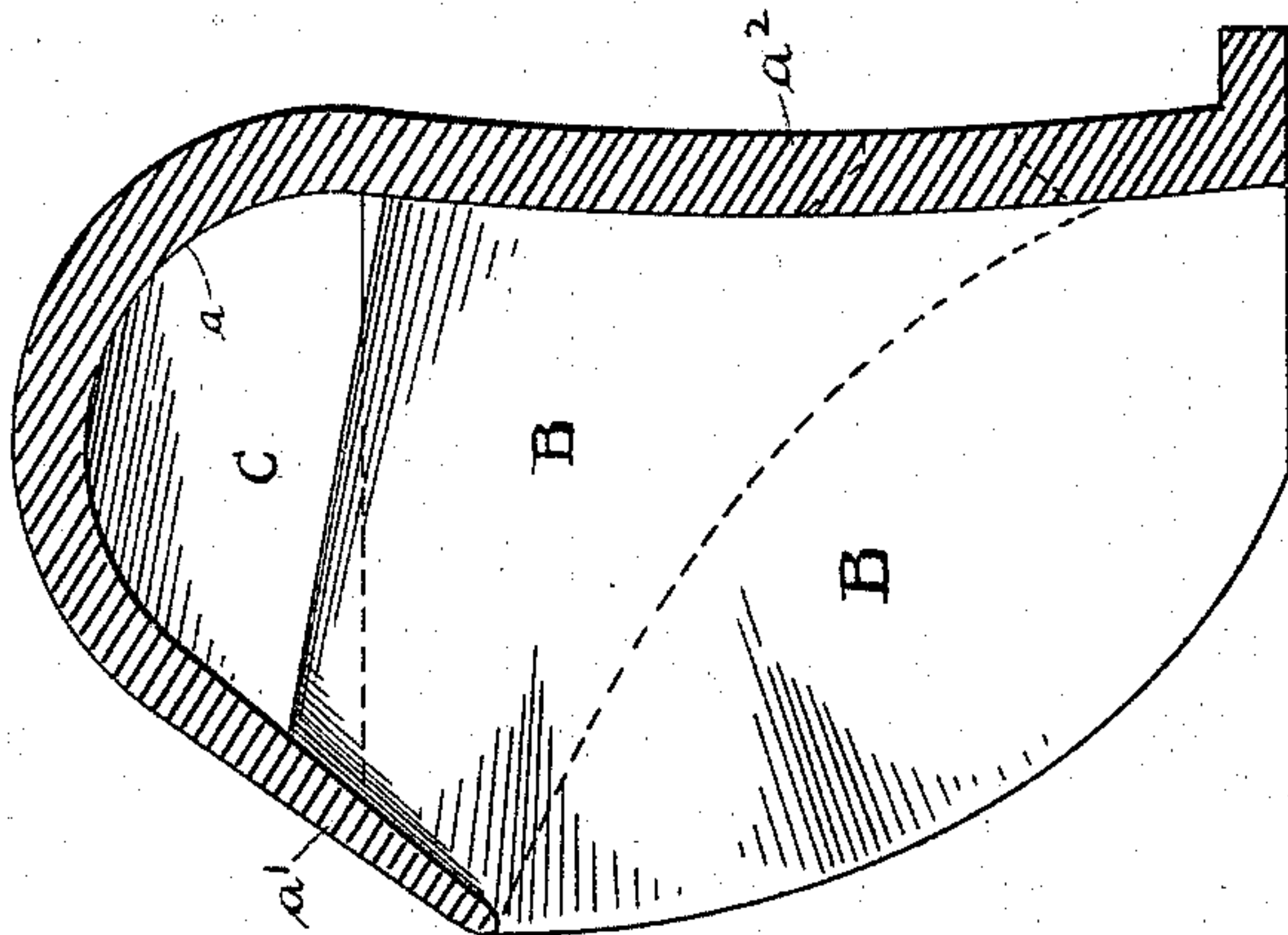
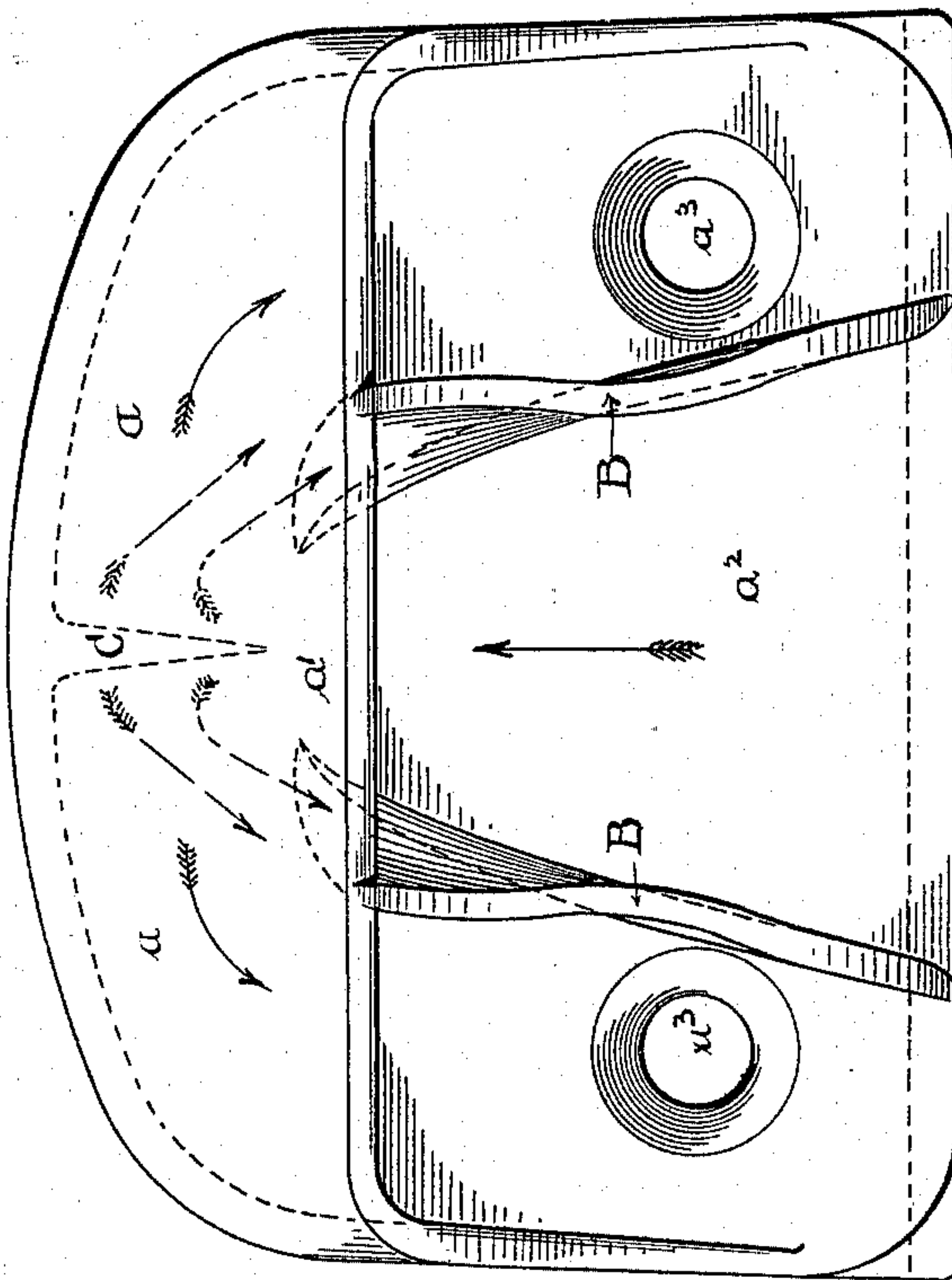


Fig. 1.



Witnesses.

*H. Monteverde*  
*Wm. F. Booth*

Inventor  
*Andre Chavanne*  
By *Alex. J. Voglsang*  
attorney



# UNITED STATES PATENT OFFICE.

ANDRE CHAVANNE, OF GRASS VALLEY, CALIFORNIA.

## WATER-WHEEL BUCKET.

SPECIFICATION forming part of Letters Patent No. 571,510, dated November 17, 1896.

Application filed March 11, 1896. Serial No. 582,817. (No model.)

*To all whom it may concern:*

Be it known that I, ANDRE CHAVANNE, a citizen of the United States, residing at Grass Valley, county of Nevada, State of California, have invented an Improvement in Water-Wheel Buckets; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of buckets for water-wheels adapted to be driven by the impact and reaction of a stream of water under head or pressure, said wheels being commonly known as "hurdy-gurdy" wheels.

My invention consists in the novel construction of the bucket which I shall hereinafter fully describe, and which has for its objects the provision of an effective divisional receiving and impact surface and side clearing and reaction surfaces avoiding interference with the incoming stream and preventing eddies and similar disturbances due to defective clearance, the whole resulting in a more effective power and more regular motion, adapting the wheel to be applied to hoisting-works, sawmills, and to all classes of machinery requiring variation in power.

Referring to the accompanying drawings, Figure 1 is a front view of my bucket. Fig. 2 is a vertical section of same.

The cavity  $a$  of the bucket is concaved or rounded both ways, laterally, as seen in Fig. 1, and vertically, as seen in Fig. 2. The entrance to this cavity is formed between its rounded outer or upper wall  $a'$  and its extended inner wall  $a''$ , in the latter of which are the holes  $a^3$  for the fastening devices by which the bucket is secured to the wheel-rim. On the rear wall and entering the mouth of the bucket-cavity and there extending between the two walls are two plates, ribs, or wings B, which are inclined by converging inwardly, and thus divide the bucket into three compartments, one central and two side compartments. These wings, which thus form divisional walls, do not extend all the way into the base of the bucket-cavity, but terminate short thereof, thus leaving free communication within the cavity between the central and side compartments. In the center of the cavity-bottom is a cutter or peak C in the median plane of the central compart-

ment, which said cutter receives and divides the stream.

The stream, as shown by the main arrow in Fig. 1, enters the central compartment, which by reason of its inwardly-contracting shape is nozzle-like and facilitates the entrance, and said stream, striking the cutter C, is divided, and the two parts thence flow, the greater portion of each into and outwardly along the cavity bottom and out along its sides in the side compartments, and the lesser portion flows outwardly along the inner walls of the side compartments, all as shown by the arrows in Fig. 1. Thus it will be seen that the stream is upon impact divided, and its parts, flowing smoothly, but with great force, continue the impact in the cavity-bottom, and thence curving outwardly to each side, react in the outwardly-contracting side compartments and clear smoothly without interference with the incoming stream and wholly avoiding eddies and other boisterous actions which result from imperfect reaction and clearance.

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

1. A water-wheel bucket having a cavity curved in both directions, and separated wings or ribs extending between the cavity-walls and terminating short of the bottom of said cavity whereby the latter is divided into compartments communicating at their bases, said cavity having in the center of its bottom in line with the median plane of the central compartment a cutter to receive and divide the entering stream.

2. A water-wheel bucket having a cavity curved in both directions and formed between an outer or front short wall and an extended rear or back wall, and separated wings or ribs on the back wall and extending between the cavity-walls and terminating short of the bottom of said cavity whereby the latter is divided into compartments communicating at their bases.

3. A water-wheel bucket having a cavity curved in both directions and formed between an outer or front short wall and an extended rear or back wall, and separated wings or ribs on the back wall and extending between

the cavity-walls and terminating short of the  
bottom of said cavity whereby the latter is  
divided into compartments communicating  
at their bases, said cavity having in the cen-  
5 ter of its bottom in line with the median  
plane of the central compartment a cutter to  
receive and divide the entering stream.

4. A water-wheel bucket having a cavity  
curved in both directions and separated  
10 wings or ribs extending between the cavity-  
walls in inwardly-converging planes and ter-  
minating short of the bottom of said cavity  
whereby the latter is divided into a central  
nozzle-like or inwardly-contracting compart-

ment and side compartments outwardly con- 1  
tracting, all of said compartments communi-  
cating at their bases, said cavity having in  
the center of its bottom, in line with the  
median plane of the central compartment, a  
cutter to receive and divide the entering 2  
stream.

In witness whereof I have hereunto set my  
hand.

ANDRE CHAVANNE.

Witnesses:

D. FRICOT,  
JACOB WEISSBERRY.