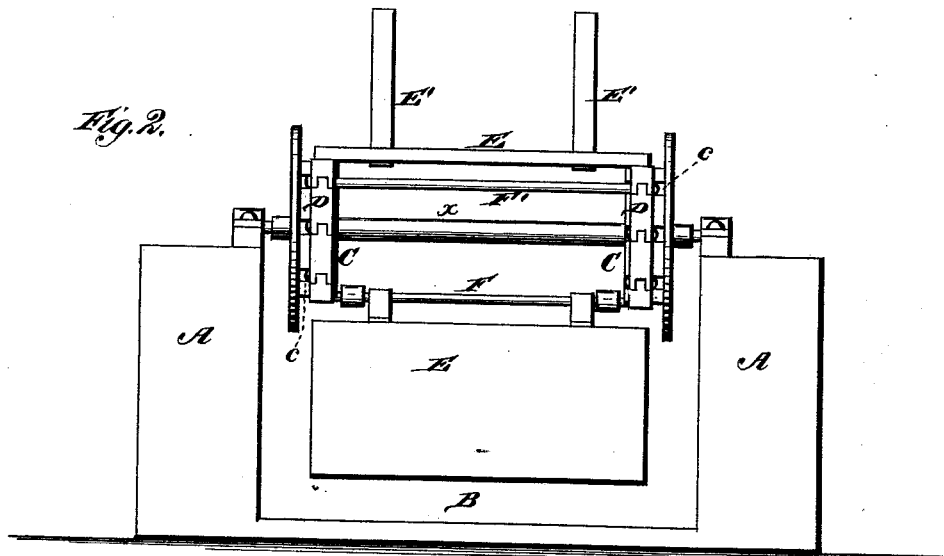
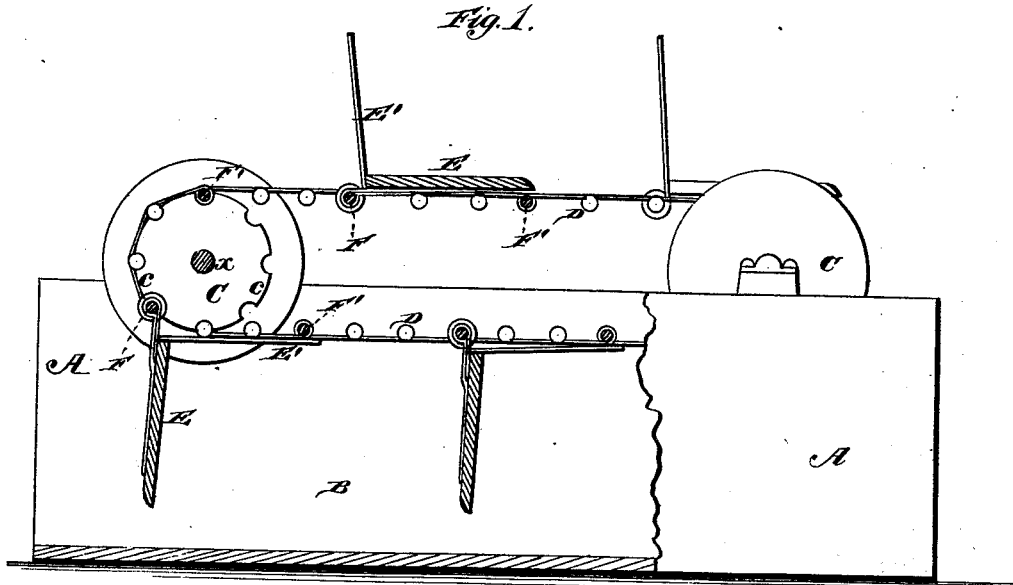


W. C. BATES.  
Water-Wheel.

No. 217,977.

Patented July 29, 1879.



WITNESSES  
*Robert Everett*  
*W. R. Sherman*

INVENTOR.  
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ATTORNEYS

# UNITED STATES PATENT OFFICE.

WILLIAM C. BATES, OF LAWRENCE, KANSAS.

## IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. 217,977, dated July 29, 1879; application filed April 12, 1879.

*To all whom it may concern:*

Be it known that I, WILLIAM C. BATES, of Lawrence, in the county of Douglas and State of Kansas, have invented certain new and useful Improvements in Water-Wheels; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal section of my water-wheel, and Fig. 2 is an end-elevation view of the same.

My invention relates to a water-motor of that class where buckets secured to an endless chain passing over revolving drums impart to the shaft a rotary motion, which may be connected with machinery; and the novelty consists in the construction and arrangement of parts, as will be more fully hereinafter set forth.

Referring to the drawings, A represents abutments, masonry floats, or walls, between which is formed the race or flume B, and in which are journaled the shafts *x* of revolving drums C, having teeth or projections *c* on their peripheries. Over these drums C operates an endless chain, D, carrying buckets E, having arms E' at right angles therewith.

The drums may be placed at any suitable

distance apart, and constructed of any desired size and material.

It will be observed that the drums C are each formed of two toothed disks hung upon the shaft *x*, and that the linked portions of the endless chain D are connected by rods F F' upon each alternate one, F, of which the buckets E are hung, the arms E', resting upon the intervening rods F', as shown.

As the buckets reach the head-water, the force of the running current engages the arm against the rods F', and, as each bucket has this effect, all slack in the endless chain is taken up.

I am aware that polygonal drums mounted upon vertical shafts have been combined with an endless chain carrying water-buckets, as shown in Patent No. 54,128, April 24, 1866, and this construction is not claimed herein.

I claim—

The buckets E, having right-angled arms E', combined with and adapted to operate in relation to the endless chain C c F F' to take up slack, as set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM C. BATES.

Witnesses:

H. C. MECHEM,  
TAYLOR HOLBROOK.