

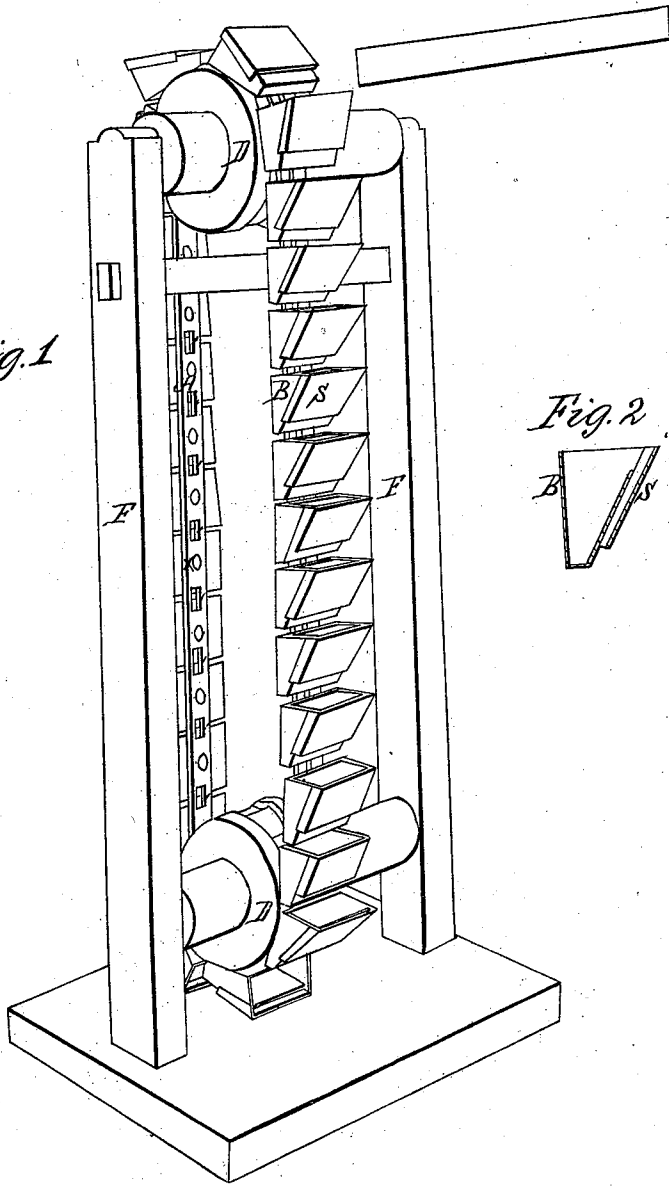
*J. Dutton Jr.,*

*Chain Pump,*

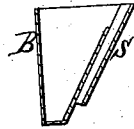
*N<sup>o</sup> 1,499,*

*Patented Feb. 26, 1840.*

*Fig. 1*



*Fig. 2*



# UNITED STATES PATENT OFFICE.

JOHN DUTTON, JR., OF ASTON, PENNSYLVANIA.

## CONSTRUCTION OF THE BUCKETS IN CHAIN-BUCKET WHEELS.

Specification of Letters Patent No. 1,499, dated February 26, 1840.

*To all whom it may concern:*

Be it known that I, JOHN DUTTON, JR., of Aston township, Delaware county, State of Pennsylvania, have invented a new and useful Improvement in the Endless Chain of Water-Buckets for Propelling Machinery by the Gravity of Water, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a perspective view of the machine. Fig. 2 is a section of one of the buckets.

This machine consists of an endless chain A of buckets B passing over a cylindrical drum D turning on gudgeon at the top of a vertical frame F and under a similar drum D' revolving near the bottom of said frame, each of said drums being channeled around its circumference in an endless channel and again in parallel grooves at right angles to the endless channel and parallel with the axis of the drum to receive the connecting or joint bolts of the chain in said parallel channels to prevent the chain from slipping. The chain is made of flat pieces of iron with bolts passing through their ends where they unite, there being a flat bar to which the bucket is riveted placed with its ends between two pair of narrow bars. The connecting bolts enter the depression on the surface of the drums and thus the chain is prevented from slipping.

The buckets B are made each with five sides narrow at the bottom and wide at the top and secured to the links of the chain by rivets or screws passing through the back and the link and securely riveted. The front

of each bucket does not extend as high as the sides and back for the purpose of allowing the water to spill over the top edge of the front and be caught by an outside spout S which conducts the water to the bucket below. This spout consists of a rectangular piece S as wide as the bucket, but not as deep, extending from the top of the sides to near the bottom placed a few inches out from the front of the bucket and having narrow sides to prevent the escape of water so that when a bucket is filled as high as it is intended that it should be filled the water which runs over is caught by said spout and conducted to the next bucket below.

In propelling machinery with this machine the water to be used for that purpose is conducted by a spout or trunk into the buckets near the top of the machine which water by its gravity in descending causes the chain to move the drums around, and from these, or their axles, the power to be conveyed for propelling machinery is obtained. When the buckets reach the under side of the lower drum they discharge their contents of water and ascend on the opposite side empty.

The invention claimed and desired to be secured by Letters Patent consists—

In the construction of the spout on the outside of each bucket for preventing a waste of the water by conducting that which runs over the edge of the bucket after it is filled to the bucket below.

JOHN DUTTON, JR.

Witnesses:

WM. P. ELLIOT,  
EDMUND MAHER.