

A. French,

Tide Power.

No. 103,439.

Patented May 24, 1870.

Fig. 1.

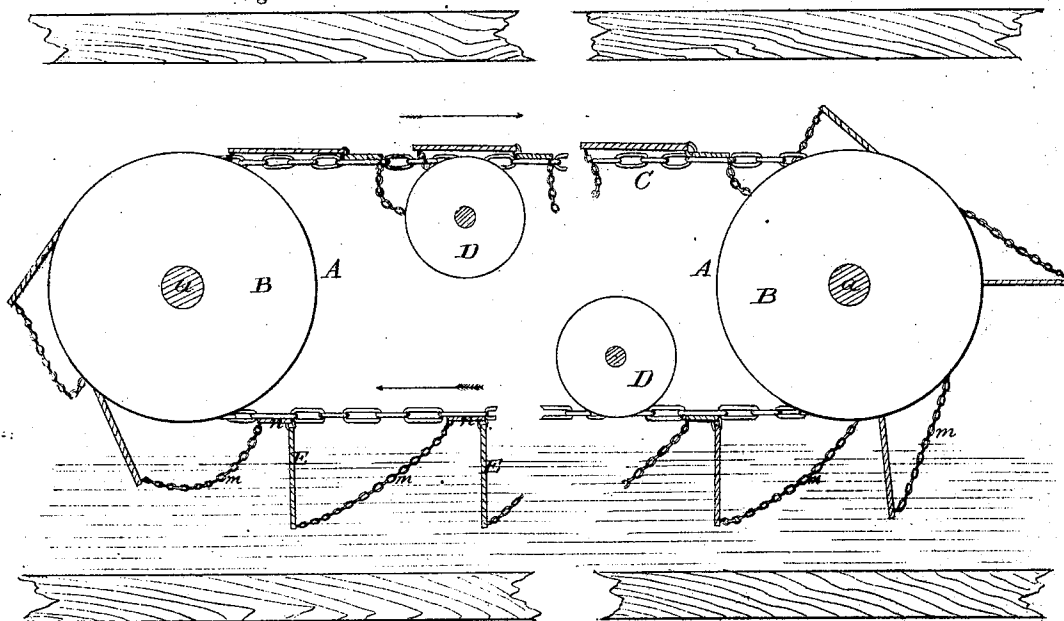
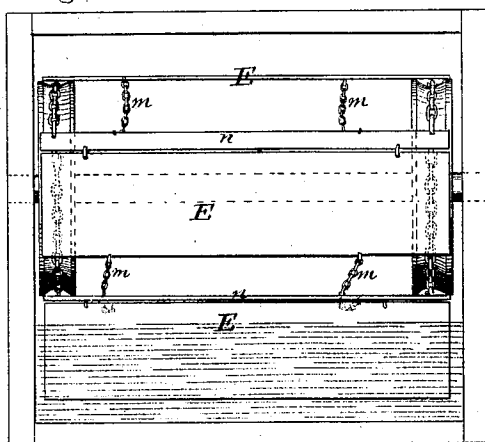


Fig. 2.



Witnesses.

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ABEL FRENCH, OF CENTRAL CITY, IOWA.

Letters Patent No. 103,439, dated May 24, 1870.

IMPROVEMENT IN WATER-POWER MECHANISM.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, ABEL FRENCH, of Central City, in the county of Linn and State of Iowa, have invented a new and valuable Improvement in Water-Power Mechanism; 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 central vertical longitudinal section of my invention.

Figure 2 is an end view thereof.

My invention relates to means for utilizing water-power, and consists in the construction and novel arrangement of devices, whereby a chain of buckets is passed over two or more wheels or rollers in such a manner that they will be expanded to receive the full force of the current, when moving in the direction thereof, and will be folded up, thereby opposing but little resistance when passing in the contrary direction.

The letters A A designate the rollers over which the chain C of the buckets passes. Each roller consists of two grooved disks B B, connected by the shaft a, provided with journals, arranged to rotate in suitable bearings in the walls of the flume.

D D represents smaller rollers, placed alternately above and below, within the chain of buckets, and designed to support the same.

The buckets E E are hinged to the bars n, to which are secured, at each end thereof, the chains c c.

The bars n n serve to keep the chains c c at the proper distance apart.

The buckets are hinged thereto by one edge, in such

a manner as to hang pendent when they are passing from the under portion of one wheel to the other.

In this position it is designed that they shall receive the full force of the current passing through the flume, and, in order to prevent them from being rotated upward on their hinges by the force of the current, the stay chains m m are provided.

These stay chains are attached to the lower edge of each bucket, and connect the same to the edge of the preceding bar n.

In returning from the top of one wheel to the other, the buckets are folded up by the action of the current, and offer but little resistance thereto.

The flume wherein this arrangement is employed may be wholly or partially filled with the current of water. The wheels and buckets may be either wholly or partly submerged. If the latter condition obtains, the action is similar to that of an undershot wheel, but with this difference, especially, that the number of buckets opposed at one time to the force of the current is not limited by the size of the wheel.

What I claim as my invention, and desire to secure by Letters Patent, is—

The endless chain herein described, having buckets E, gauge-bars n, and stay chains m, in combination with the stationary rollers provided with the grooved disks B, when constructed and arranged to operate substantially as specified.

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

Witnesses:

J. A. DAVIS,
WM. WISE.

ABEL FRENCH.