J. C. ESTEY.

Utilizing Power of Water in Pipes.

No. 201,875. Patented April 2, 1878.

Fig. 1.

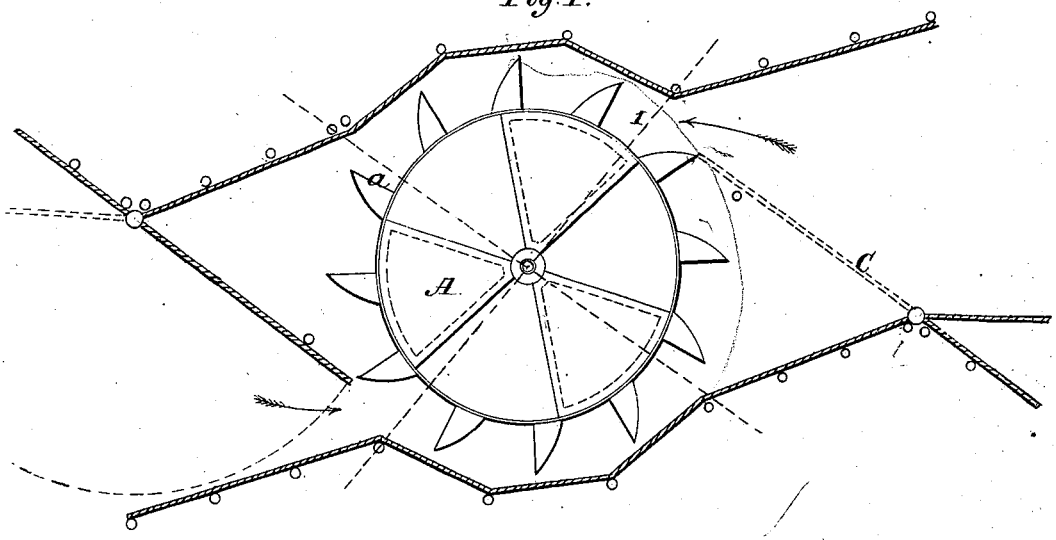
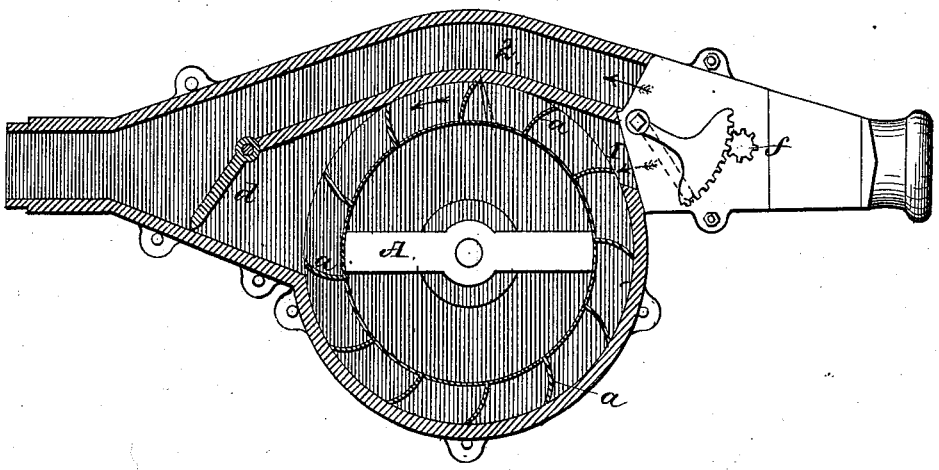


Fig. 2.



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IMPROVEMENT IN UTILIZING POWER OF WATER IN PIPES.

Specification forming part of Letters Patent No. **201,875**, dated April 2, 1878; application filed July 18, 1877.

To all whom it may concern:

Be it known that I, JOHN CROWELL ESTEY, of the city and county of San Francisco, State of California, have invented a new, useful, and Improved Device for Utilizing the Power of Water transmitted in pipes or tunnels in tide-currents or streams; and do hereby declare the following to be a full, perfect, and complete description of the same, with reference to drawings for illustration.

Figure 2 shows a sectional view of my invention, with the passages, wheel, and gates; Fig. 1, the same view when applied to tide-currents and streams.

The object of my invention is to utilize the power of water conveyed in pipes or flumes without wasting the water or taking it out of the pipes, and to utilize tide-currents and streams of running water.

The construction of my invention is as follows: The cylindrical wheel A is provided with twelve buckets, (more or less,) *a*, about six inches (more or less) in length, and about ten inches (more or less) in width. (Shown in Fig. 1 of the drawing.) The circumference of the wheel inside the buckets is inclosed like a cylinder, which may be made water-tight, the whole being made of metal or wood, or both, and of a size corresponding to the size of the pipes or flume, or the current of the water. This wheel is then inclosed, as shown by Fig. 2 of the drawing, in an iron casing or section of pipe, and may be connected on water-mains at any point. This casing is provided with two compartments, Nos. 1 and 2, of the same area as that of pipes on which they are used, and also with two gates, C and *d*, at the intersection of chamber No. 1 with the wheel, to direct the water in and through passage No. 1 when applied to the wheel, and through passage No. 2 when the wheel is not in use. The gates are regulated by a wheel, *f*, from the outside of the casing. When my invention is submerged in a tide-current or stream, only one passage is used, as shown in Fig. 1 of the drawing, and the gates C and *d* are constructed as therein shown, and the wheel will revolve always the same way when operated by the ebbing or flowing of the tide, the current being conducted to both sides of the wheel, as shown in Fig. 1 by the arrows. When the current is but one way one of the gates may be dispensed with.

The construction of my invention is the same when used in running streams of water, the length of the funnel-shaped frame being varied to suit the location.

In this way I am able to utilize the power of water transmitted in pipes or flumes without changing the current from the pipes, or wasting the water or impeding its flow, and on streams to utilize the currents without the expense of damming the stream, or the expense usually connected therewith, thus obtaining a simple, cheap, and durable power for numerous purposes to which it may be generally applied.

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

The cylindrical wheel A, provided with oblong buckets *a*, working in the chamber No. 1, constructed in water-pipes, currents, or streams, as herein described, having in combination therewith the passage No. 2, the gates C and *d*, and the wheel *f*, as herein described.

J. C. ESTEY.

Witnesses:
ROBT. ASH,
M. J. SULLIVAN.