

Patented Dec. 6. 1870.

Fig 1

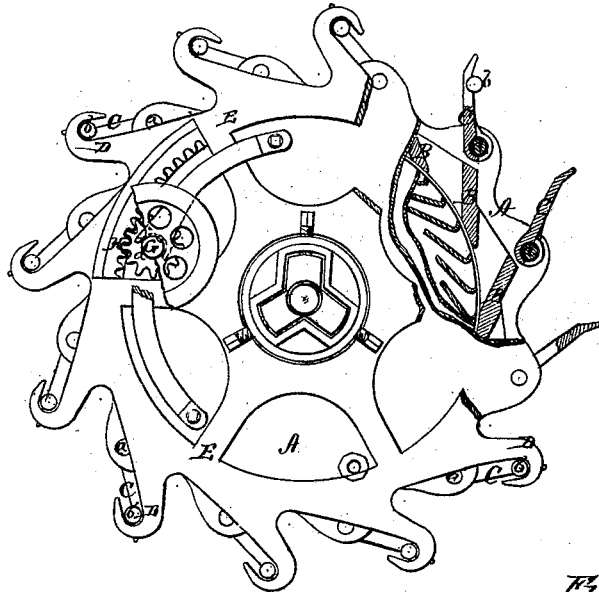


Fig. 3

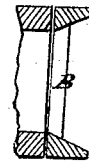
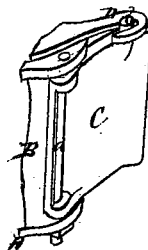


Fig 2



Witnesses:

Harry King
C. S. Everts.

Inventor.

William H. Clever,
per Alexander Mason
Atty.

United States Patent Office.

WILLIAM H. ELMER, OF BERLIN, WISCONSIN.

Letters Patent No. 109,885, dated December 6, 1870; antedated November 26, 1870.

IMPROVEMENT IN WATER-WHEELS.

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, WILLIAM H. ELMER, of Berlin, in the county of Green Lake and in the State of Wisconsin, have invented certain new and useful Improvements in Water-Wheels; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of the casing of a water-wheel, and in the construction and manner of operating the gates, as will be hereinafter fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a plan view of my wheel, portions thereof being in section;

Figure 2 is a side view of one of the gates; and

Figure 3 is a vertical section through one of the chutes.

A represents the casing, within which the water-wheel works.

This casing, with the chutes B B, is all cast together, making it very strong and durable.

The upper and lower parts of the chutes are beveled, as shown in fig. 3, so that the water has no parallel surface to pass in going to the wheel, and no loss by friction.

At the end of each chute is hinged a gate, C, which is so constructed that when it is shut it is perfectly tight, being held to its place by the pressure of the water. The outer end of each gate rests against the next chute instead of against the adjoining gate, as

is now most generally the case, thus forming a solid bearing for the gate.

The case and gates are flared up so that they will be perfectly tight.

Near the outer end of each gate is a pin, *b*, projecting upward, which pins are operated by means of inclined, cam-shaped arms, D D, projecting from a ring or wheel, E, said wheel resting upon the upper surface of the casing around a collar on the same, and is turned by means of a pinion, *d*, upon an upright shaft, G, engaging with a rack, H, on the wheel E.

It will be observed that the cams D D open the gates and the water shuts them, so that in case an obstruction gets into one it does not prevent the rest from shutting.

Having thus fully described my invention,

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

1. The casing A and chutes B B, constructed as described and formed in one, both the upper and lower parts of the chutes being beveled, as shown, substantially as and for the purposes herein set forth.

2. The combination of the casing A, chutes B B, gates C C, pins *b b*, arms D D, wheel E, rack H, and pinion *d*, all constructed and arranged as described, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing, I have hereunto set my hand this 15th day of April, 1870.

WILLIAM H. ELMER.

Witnesses:—

DAVID E. PUGH,
CLEMENT S. PECK.