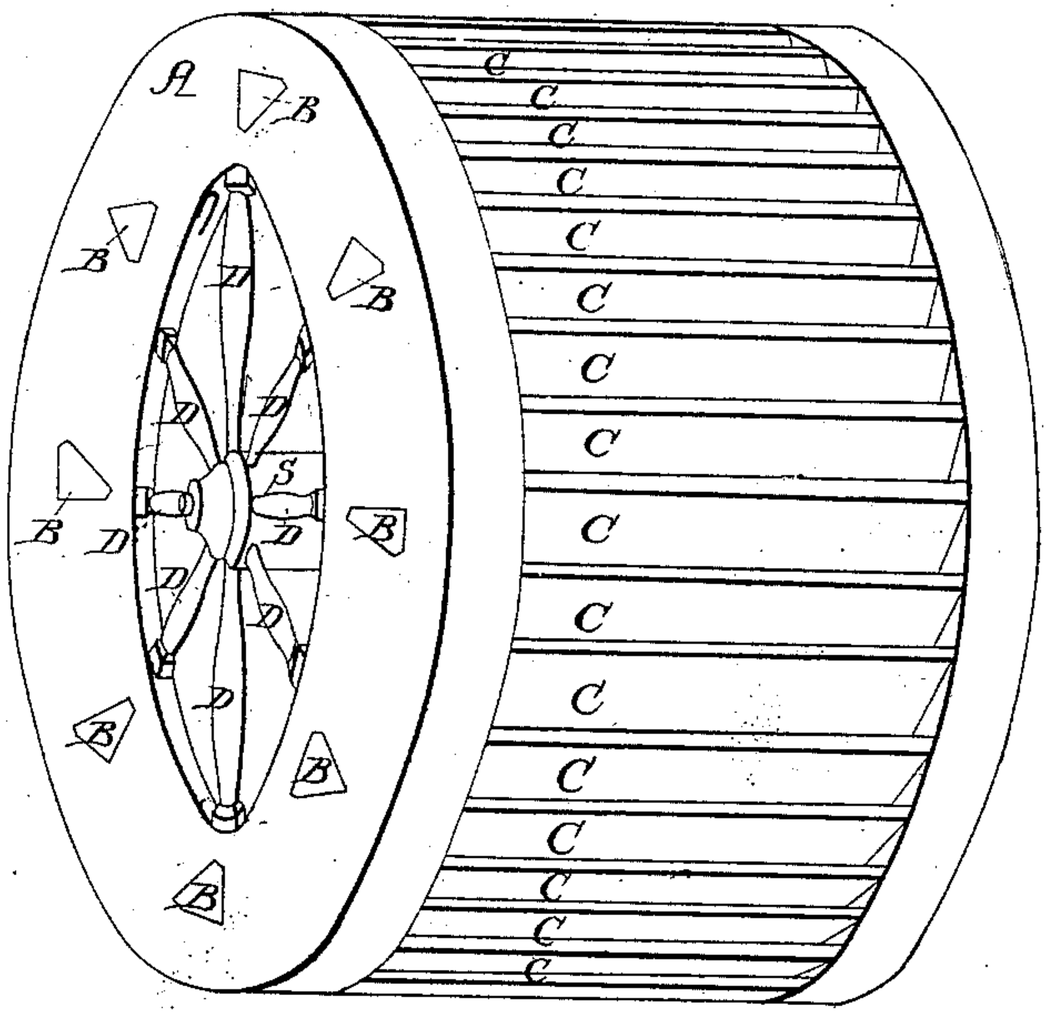
J. Miller,

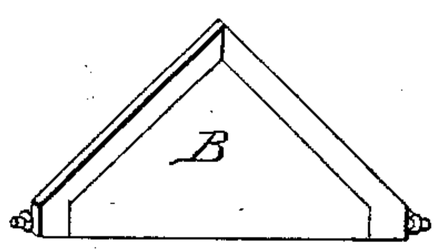
Water Wheel,

No. 27,557, Patented Mar. 20, 1860.

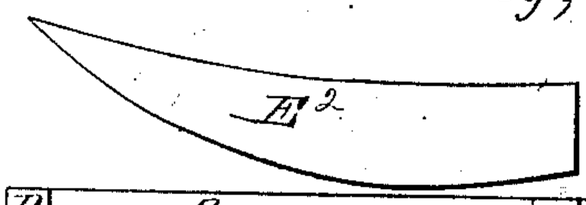
Fig; 1.



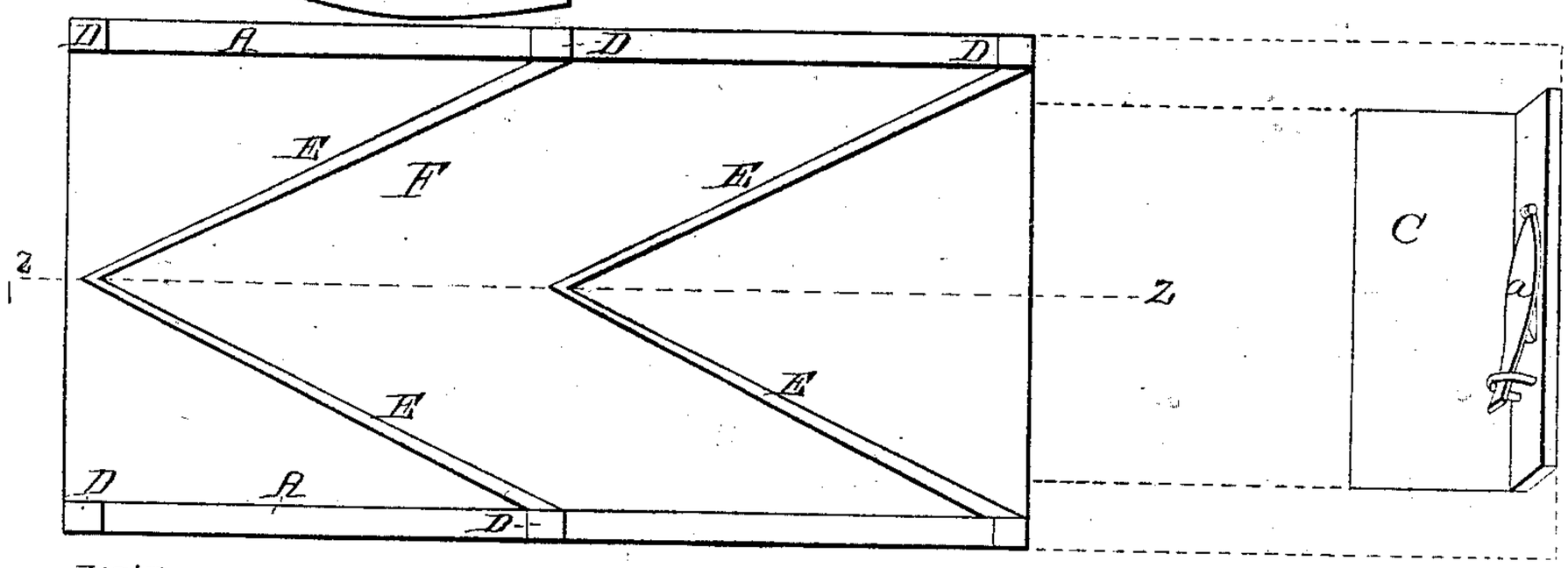
Fig; 4.



Fig; 2.



Fig; 3.



Witnesses;
J. J. Parker
Isaac Parker

Inventor;
his
John X Miller
mark

UNITED STATES PATENT OFFICE.

JOHN MILLER, OF SALTPETER, OHIO.

WATER-WHEEL.

Specification of Letters Patent No. 27,557, dated March 20, 1860.

To all whom it may concern:

Be it known that I, JOHN MILLER, of Saltpeter, in the county of Washington and State of Ohio, have invented a new and useful Improvement in Overshot or Pitch-Back Water-Wheels; and I do declare that the following is a full and clear description of the same, reference being had to the annexed drawings, making a part of this specification.

Figure 1st is a perspective view of the common water wheel with improvements attached. Fig. 2nd is a plan of the sheeting of the wheel. Fig. 3rd is a reversed view of a bucket of the wheel. Fig. 4th is a view of the anti suction valve.

My invention consists in making the facing (Fig. 1st, A,) to water wheels, known as the overshot, pitch back or breast wheel, of one fourth the width of the diameter of the wheel, to prevent the water from entering the wheel, and providing it with valves (Fig. 1, B, B, B, &c.,) at the place where each arm is connected to the facing. These valves are made of triangular form pivoted at their base (shown in Fig. 4) in the form of a right angled triangle, the hypotenuse resting on a parallelogram, (Fig. 4,) hinged on the ends of the parallelogram, and let into the facing so as to leave the outer surface smooth when the valves are closed. The valves being hinged so that the action of the wheel closes them while passing through the backwater, and prevents the water passing to the inside, and opens immediately on leaving the water to let any water discharge that may be inside the wheel. The buckets are made in the usual form and size, but in the bottom of each bucket, or elbow, is an antisuction valve (Fig. 3, *a*,) of any convenient size, hinged at one end, and has a staple over the other end, to prevent it from opening too far, but admitting a free action of it to the proper distance. This valve is to prevent suction as the buckets leave the water. Inside of the wheel, and attached to the sheeting or lining—commencing at each arm, when the valves B, &c., Fig. 1st, open out of the facing, are conductors converging to the center line of the wheel sheeting (Fig. 2, *z*,) forming an angle whose apex is on a lateral line through the center of the arms.

Fig. 1st, A, is the facing of the wheel. B, B, B, B, &c., are the anti friction valves, in the facing of the wheel. C, C, C, C, &c., are the buckets. D, D, D, D, D, &c., are arms of the wheel and S is the shaft or axle.

Fig. 2nd, D, D, D, D, D, D, are the arms of the wheel. E, E, E, E, are the conductors. E^2 is an elevation of the conductors E, E, E, E. The dotted line Z, Z, is the center line of the wheel. F, is the sheeting.

Fig. 3, C, is the bucket reversed showing the anti suction valve, open, in the bottom of the bucket or elbow. *a*, is the valve.

Fig. 4, B is the valve showing the manner of hinging it to the facing.

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

The pivoted valves B, in connection with the conductors E E in the manner and for the purpose described.

The above specification, signed and witnessed this 20th day of December A. D. 1859.

JOHN $\overset{\text{his}}{\underset{\text{mark}}{\times}}$ MILLER.

Witnesses:

J. J. PARKER,

C. B. WILLIAMS.