

S. W. Marsh.

Water Wheel.

No 79,585.

Patented July 7, 1868.

Fig: 1.

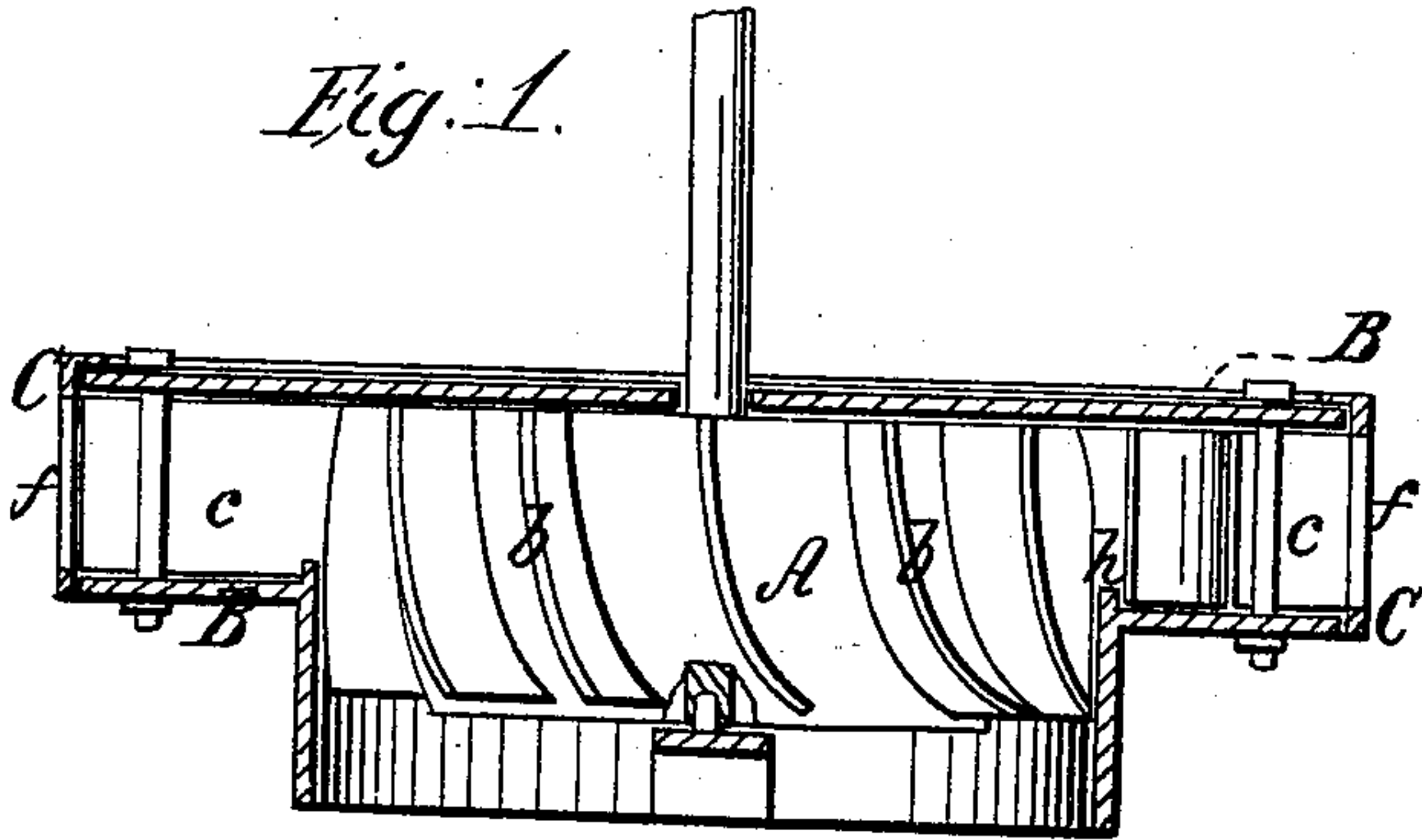
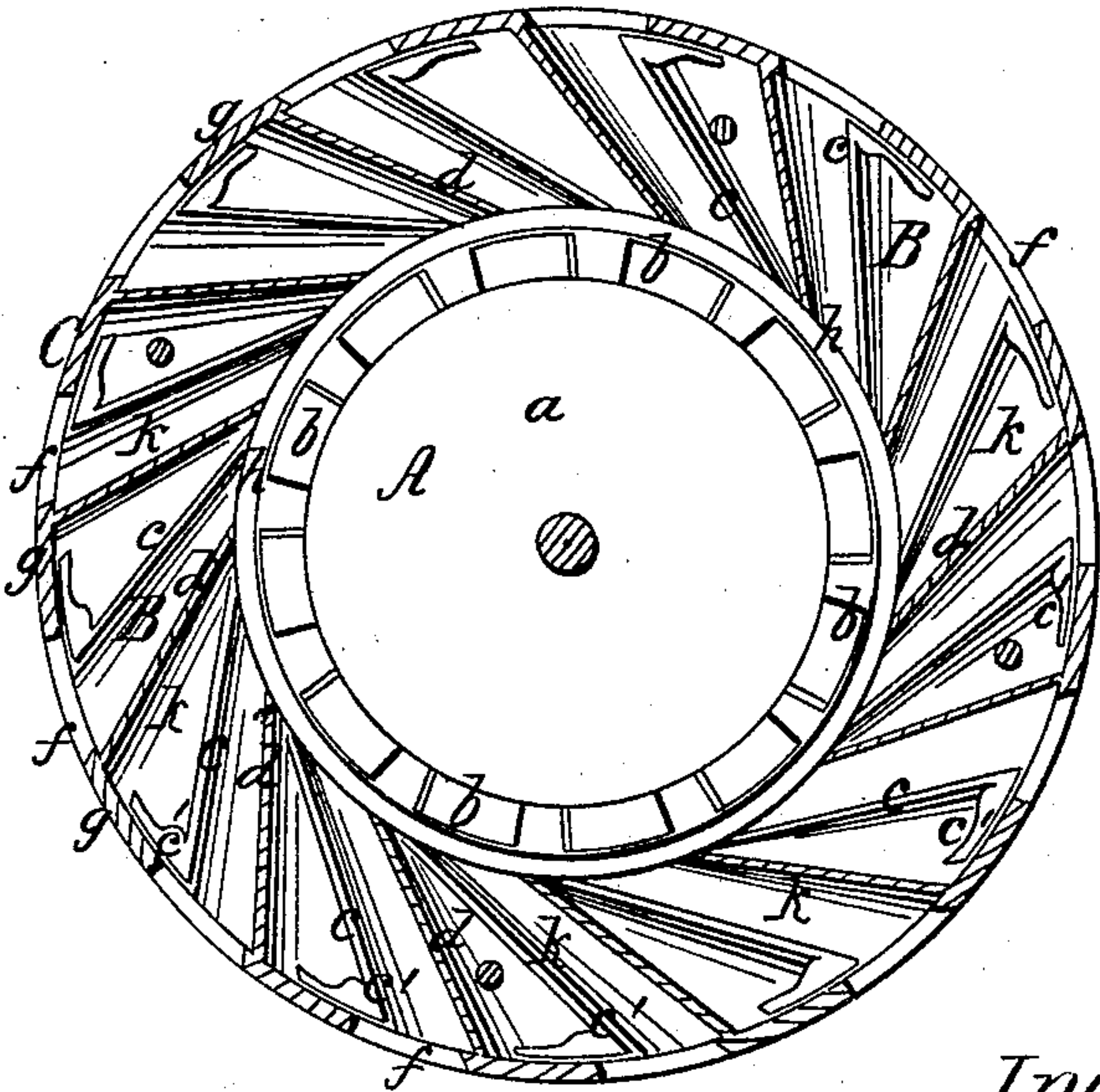


Fig: 2.



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SETH W. MARSH, OF ROCHESTER, NEW YORK.

Letters Patent No. 79,585, dated July 7, 1868.

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, SETH W. MARSH, of Rochester, in the county of Monroe, and State of New York, have invented a certain new and useful Improvement in Water-Wheels; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings making part of this specification.

Figure 1 is a central vertical section.

Figure 2, a horizontal section.

Like letters of reference indicate corresponding parts in both figures.

My improvement belongs to that class where the wheel proper is enclosed or covered by a case which directs the water upon it.

The invention consists in the special construction and arrangement of the chutes of the case, whereby the sides of the same are elastic, to prevent breaking, and the expansion and contraction of the chutes are regular and in such proportion as is best to concentrate the water upon the buckets of the wheel.

In the drawings, A indicates the wheel proper, B the casing containing the chutes, and C the annular turning-gate.

The wheel proper has nothing special in its construction, being provided with a top plate, *a*, and buckets *b b*.

The casing has tangential chutes *k* for directing the water at the proper angle upon the wheel, these chutes being bounded by sides *c d*.

The sides *c* form a part of the case itself, being attached to or constituting a portion of fixed shoulders *c' c'*, of suitable extent to form the circular bearing for the annular gate resting outside.

The sides *d* form a part of the gate C, the same projecting inward through the passages between the shoulders *c' c'*, and turning as the gate turns.

The gate is provided with ports, *f f*, for the entrance of the water. When the gate is entirely closed, the spaces *g g*, between these ports, cover the passages *k* in the case, and thus cut off the supply.

The inner ends of the tangential sides *c d* of the chutes are entirely free, and rest against a rim, *h*, to keep them in place.

Constructing the sides of the chutes in this manner has several distinct and important advantages. Both series *c d* are made elastic and of such thickness as to insure a very great degree of spring, and the inner ends being left free, they can adapt themselves to almost any position. Thus, if sticks or other objects pass into the chutes, as is frequently the case, the sides will spring to such a degree as will usually allow the impediments to pass, or, if they do not pass, the elasticity will prevent breakage under ordinary circumstances. This desired result is attained both by the spring thus insured, and by the free action of the inner ends of the sides, which, it will be noticed, can be opened to a very great degree to allow the proper escape.

In ordinary chutes of water-wheels, the sides of which are rigid, much difficulty is experienced from clogging, and it is frequently the case that the parts become broken.

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

The partitions *c*, attached to the case B, and the portions *d* of the gates C, forming the vertical sides of the chutes *k*, when both are flexible, and free to yield at their inner ends, to allow the escape of obstructions, substantially as set forth.

In witness whereof, I have hereunto signed my name, in the presence of two subscribing witnesses.

S. W. MARSH.

Witnesses:

J. FRASER,

JAMES CAMPBELL.