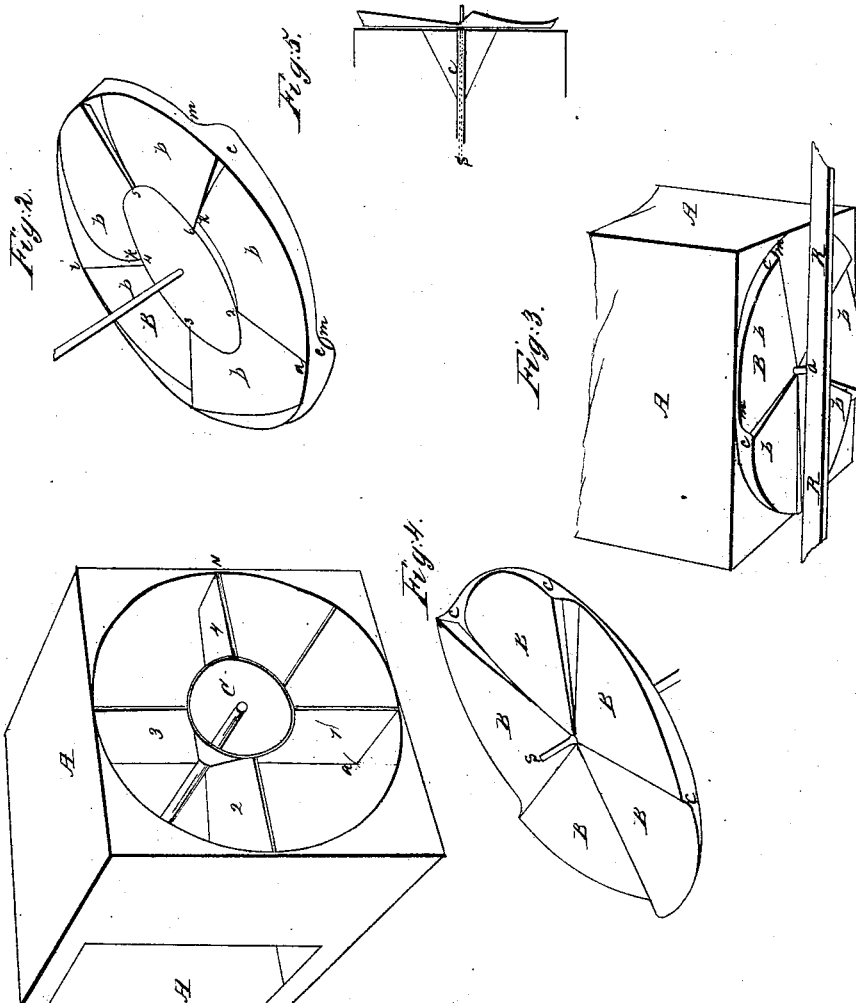


S. Streeter. Water Wheel.

N^o 5633.

Patented June 13, 1848.



UNITED STATES PATENT OFFICE.

SAMUEL STREETER, OF DETROIT, MICHIGAN.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. 5,633, dated June 13, 1848.

To all whom it may concern:

Be it known that I, SAMUEL STREETER, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Water-Wheel and Flume; 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, in which—

Figure 1 is an under view of the flume, the cone, and partitions of the flume. Fig. 2 is an upper view of the wheel and shaft. Fig. 3 is an under view of the flume, the wheel, and the sill into which the shaft passes and rests and revolves upon a countersunk step. Fig. 4 is a bottom view of the wheel. Fig. 5 is a section of the shaft, the conical surface, and the wheel.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The nature of my invention consists of a flume A, Figs. 1 and 3, with four partitions 1 2 3 4, Fig. 1, in the inside, which are perpendicular to the bottom and are at right angles to each other, and a conical surface C, Figs. 1 and 5, also within the flume, covering the center of the wheel and through which the shaft passes, and, lastly, the horizontal wheel itself B, Figs. 2, 3, and 4.

The wheel is made of cast-iron, with flat inclined buckets *b*, Figs. 2 and 3, and conical or flaring rim *c*, Figs. 2, 3, and 4, and to illustrate the principle we will take a six-foot wheel.

The shaft S, Figs. 2 and 4, is fastened in the ordinary way, either with a square on the shaft in the hub, or, when round, by groove and key.

The center of the upper face of the wheel 2 3 4 5 6, Fig. 2, is a level surface and is the base of the conical surface C, Figs. 1 and 5, which is in the flume. The buckets *b*, Figs. 2 and 3, are quadratures of circles and are five in number and are inclined planes. The openings between the buckets at the edge next to the rim *i*, Figs. 2 and 3, are three inches and those next to the circle of the center K, Fig. 2, are one and one-half inch.

At the outer edge the lap of the buckets *i*, Fig. 2, or projection beyond each other, should be three inches, and at K, Fig. 2, the inner edge, it should be one inch.

From the upper edge of the wheel to the plane surface around the center of the wheel from 1 to 2, Fig. 2, the bucket is eighteen inches. The flare of the outer rim toward the lower edge is forty-five degrees. The lower edge of the rim at the outer edge of the bottom bucket at M, Figs. 2 and 3, is scalloped out to allow the lateral and free escape of the water. The conical surface C, Figs. 1 and 5, which prevents the water riding around the center of the wheel, is to be three feet diameter at its base and two feet altitude, to be made either of wood or cast-iron, with four grooves at equal distances apart, running from the vertex to the base on its surface, these grooves to have flanges large enough to fasten the cone to the plank of the partitions 1 2 3 4, Fig. 1, of the flume. The bottom of the flume, Fig. 1, has a circular opening, through which the water passes to the wheel, equal in diameter to the upper diameter of the rim of the wheel.

The partitions 1, 2, 3, and 4 of Fig. 1 are of plank, and are grooved into the sides of the flume, as seen at *a a*, Fig. 1, and the opposite ends are in the flanges on the surface of the cone, and which is fastened thus to them. The partitions 1 and 3, Fig. 1, which are at right angles to the direction of the water, are two feet high, and of those which are parallel to the direction of the water that end which is next to the water is two and one-half feet high, as at 2, Fig. 1, and gradually slopes to the opposite side of the flume, where the lowest end of that partition is one and one-half feet high, as at 4, Fig. 1, at *e z*.

The shaft S, Figs. 2 and 5, of the wheel passes up through the vertex of the cone. The shaft is to be of wrought-iron, and extends below the wheel, and is terminated by a half-round of cast-steel, set into a countersunk step which is firmly fastened to a sill R, Fig. 3, below.

There being five buckets to the wheel and but four vertical partitions in the flume, the

wheel will be constantly passing quarter-centers, and it thus gives a steady and uniform motion.

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

The connection of flat inclined buckets and conical rim and the center of the wheel covered by a conical surface of the flume, in com-

bination with the partitions of the flume to prevent water riding around on the center of the wheel to prevent surging, thereby giving the water a downward direction only.

SAMUEL STREETER.

Witnesses:

JNO. C. THOMAS,
JO. D. WARD.