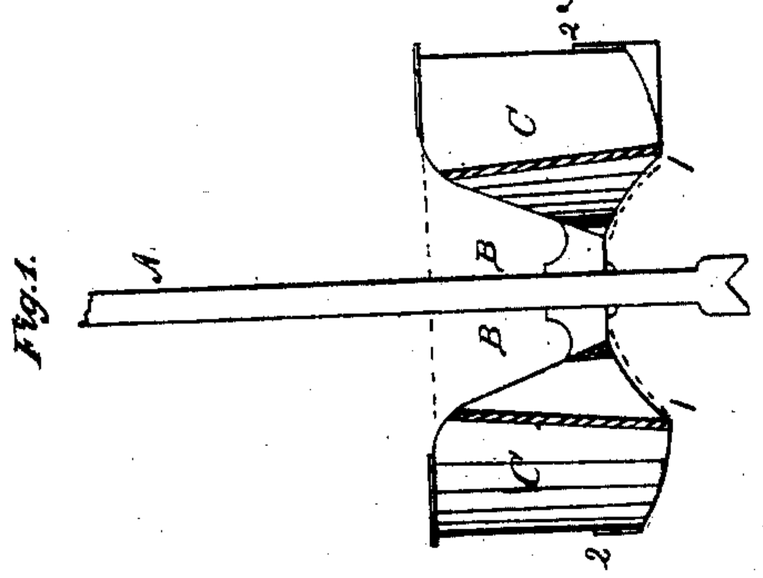
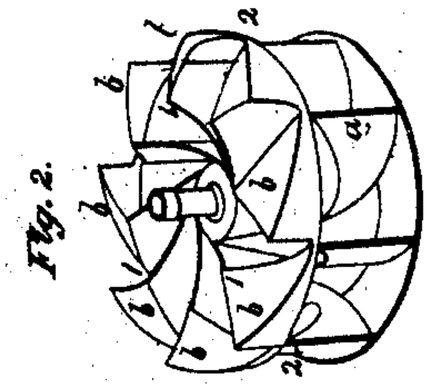
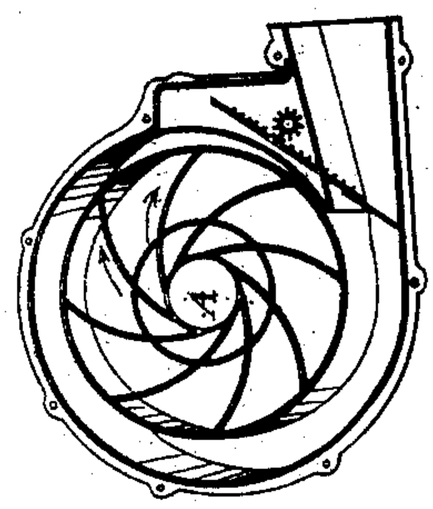
T. Tripp.

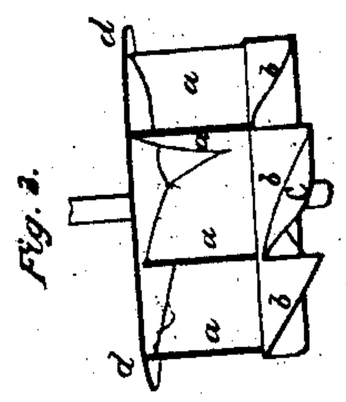
Water Wheel.

No 35,118. Patented Apr 29, 1862.









Witnesses.
C. P. Winsgad
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UNITED STATES PATENT OFFICE.

THOMAS TRIPP, OF AMSTERDAM, NEW YORK.

IMPROVED WATER-WHEEL.

Specification forming part of Letters Patent No. **35,118**, dated April 29, 1862.

To all whom it may concern:

Be it known that I, THOMAS TRIPP, of Amsterdam, in the county of Montgomery and State of New York, have invented a new and Improved Mode of Constructing Water-Wheels; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in first constructing a cone about a shaft, as represented in Figure 1, included within the red lines, with the apex of the cone downward. This cone is securely fastened to the shaft, which shaft is denominated a "driving-shaft." To this cone are attached eight buckets, (more or less, according to the size of the wheel,) which are securely fastened to the wheel or cone in a diagonal or circular direction, as represented on the accompanying drawings. The curved or main buckets have each a circular form or direction, the curvature or arcs of which, if continued, would describe a sphere of the same diameter of the entire wheel. The bottoms or lower inner edges of these main buckets attached to the cone are curved in or concave on the inner sides and edges toward the center of the wheel, and on the other or outer bottom edges of these main buckets are other smaller buckets, called "auxiliary buckets," as represented in Fig. 3 by the letter C, and in Fig. 2 by *b b b b*. The lower edges of these auxiliary buckets are curved or concave, the arcs of which, if extended, would describe a circle of the same diameter of the entire wheel. The points at which and the manner of attaching these auxiliary buckets to the main buckets are shown in Fig. 2, *b b b b b*. These auxiliary buckets are constructed in a V-like shape, the inner edges of the bottoms of which conform to the curvature of the main buckets, to which they are fixed, and the outer edges of the bottoms to the auxiliary buckets are convex, and the lower or unconnected edges of the bottoms of said auxiliary buckets are concave, the arcs of which, if carried out, would describe a circle of the diameter of the entire wheel. Around the bottoms on the outside of each of these auxiliary buckets I place a band entirely round the wheel, which band or rim is represented in Fig. 3 by letters *b b b*. This band or rim forms the outer side of the auxiliary bucket, conforming to the curvature of said auxiliary bucket. The curvature of the main buckets may be readily perceived and understood by reference to Fig. 4, which is a horizontal bisection of the wheel, representing the manner in which the main buckets are attached to the cone.

Letter A in Fig. 4 is intended to represent the apex of the cone and the arrows to represent the course and direction of the main buckets and of the wheel when in motion.

The manner in which the wheel is driven may be easily understood by the following brief description, viz: The water, striking against the outer or convex sides of the main buckets *a a a a*, Fig. 3 of the drawings, (the wheel turns from right to left,) then falls down into the auxiliary buckets *b b b b*, the bottoms of which are inclined or lead downward toward the bottom of the wheel, making a point of resistance against which the water strikes, giving additional motion to the wheel.

The wheel is intended as a percussion and not a reaction wheel.

The object of making the lower edges of the bottoms of the auxiliary buckets and the inner lower edges of the main buckets concave or in a curve is to give more room or space at the bottom of the wheel for the water to pass off, so as to not obstruct or retard the motion of the wheel.

Every curve in or about the buckets to this invention is intended, if carried out, to form a circle of the same diameter as the entire wheel, which arrangement gives symmetry to the wheel. The bottom parts of the main buckets *a a a a*, Fig. 3, and C C, Fig. 1, are so made that the bottom points or apices thereof extend below a point on a straight line from 2 to 2, as represented in Fig. 1, these points or apices so extending as represented at 1 in Fig. 1 and by 1 in Fig. 2, and they extend far enough below the points 2 2 to receive the inclined auxiliary buckets. This is an advantageous point over other wheels.

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

Having provided myself with the necessary

patterns, I cast a cylindrical cone, B B, Fig. 1, (included within red lines,) the main or curved buckets *a a a a*, Fig. 3, and the auxiliary buckets *b b b b*, Fig. 3, at one casting in the same mold. The top of the cone is curved to receive the top plate, *d d*, Fig. 3. This plate *d d*, Fig. 3, is cast separate and afterward fastened to the top of the wheel. The driving-shaft A, Fig. 1, is then passed through the center of the wheel-cone and securely fastened therein. The entire wheel is made of iron, but may be made of any suitable metal or material.

This invention differs from others similarly constructed in the following, viz: the conic form or shape of the center, the extension of the lower edges of the main buckets, as specified, the curvature of the inner bottom edges of the main buckets, and the concave edges of the lower or disconnected parts of the auxiliary buckets, the V-like shape of the inclined auxiliary buckets, and in having an inclined curved auxiliary bucket attached to a curved or concavo-convex main bucket conforming to the curvatures thereof.

Some of the many advantages gained by this invention over others are that the auxiliary buckets are long enough from point to point so as not to change the direction of the water in passing through, making the invention a pure percussion water-wheel, and the cutting away and concaving the inner lower edges of the main buckets from the inner lower point of the auxiliary buckets to the point where the main buckets are attached to the cone provides more room and gives more chance to the water and foreign bodies to pass off without obstructing the wheel than can be found or are furnished in any other mode of wheels.

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

The general construction of a water-wheel arranged so as to combine the following parts, viz: first, the conic form or shape of the center of this wheel as applied to water-wheels; second, the extension of the lower middle point of the main buckets C C, Fig. 1, (at the point 1,) so as to receive the inclined auxiliary buckets, as represented in the specification; third, the curvature of the inner bottom edges of the main buckets, as represented in Fig. 1 by the red dotted lines; fourth, the curved and V-like shape of the inclined auxiliary buckets to water-wheels, as represented by *b b b b*, Fig. 2; fifth, the scallop or concave of the lower edges of the bottom of the inclined auxiliary buckets as applied to water-wheels, the different curves of the parts of the wheel being arcs of the same circle as the circumference of the entire wheel; sixth, inclined curved auxiliary buckets attached to curved or concavo-convex main buckets conforming to the curvature of said main buckets.

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Witnesses:
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