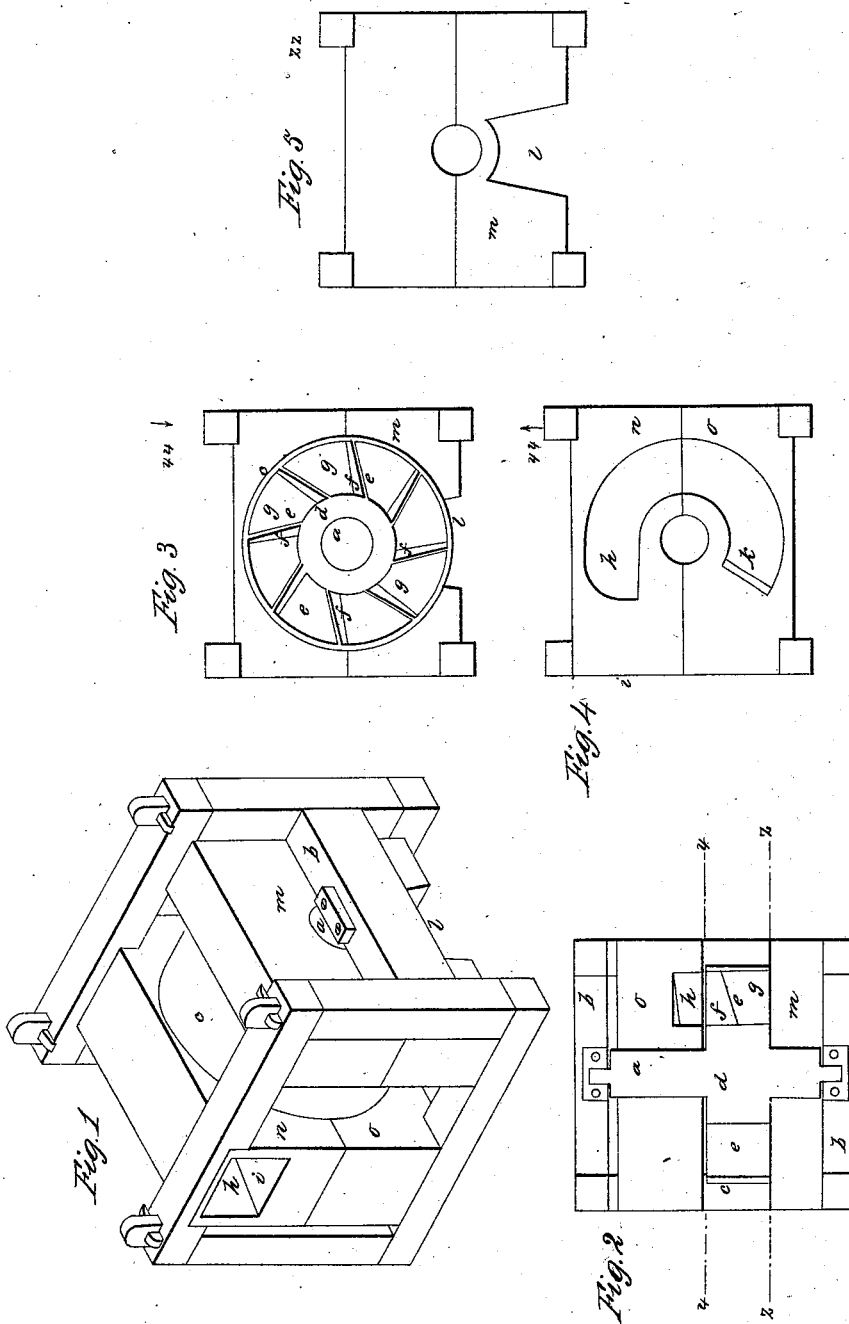


H. Parsons,

Water Wheel,

N^o 5,223,

Patented Aug. 7, 1847.



UNITED STATES PATENT OFFICE.

HORACE PARSONS, OF HOUSTON, ILLINOIS.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. 5,223, dated August 7, 1847.

To all whom it may concern:

Be it known that I, HORACE PARSONS, of Houston, in the county of Adams and State of Illinois, have invented a new and useful Improvement in the Water-Wheel for Mills; and I declare that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of the wheel with the chute and framing; Fig. 2, a horizontal section taken through the axis of the wheel; Fig. 3, a vertical section taken at the line X X of Fig. 2 and looking in the direction of the arrow; Fig. 4, a like section taken at the same line and looking in the direction of the arrow reversed, and Fig. 5 another section taken at the line Z Z.

The same letters indicate like parts in all the figures.

The nature of my invention consists in making the buckets of the wheel, which extend from the hub to the closed rim, in lines tangential to a circle of less diameter than the hub and for about one half their depth parallel, or nearly so, with the axis of the wheel, and the other half extending therefrom at an obtuse angle when this is combined with a scroll chute for discharging and keeping the water onto several of the buckets at the same time to act by the percussion and pressure due to the head, the tangential direction of the buckets directing the bulk of the water toward the rim of the wheel, and with a plate on the discharging-face of the wheel, which is provided with only one aperture below the axis of the wheel to prevent the escape of the water from the buckets before it shall have exerted its full force on the wheel, and then to exert a force on the oblique position of the buckets as the pressure in the chute forces the water out of the buckets through this aperture.

In the accompanying drawings, *a* represents the horizontal shaft of the wheel, the journals of which run in appropriate boxes in the frame *b*, and *c* the rim connected with the hub *d* by means of the buckets *e*. These buckets are so formed that for about one-half of their width *f* they are nearly parallel

with the axis of the wheel and tangential to the hub or to a circle of less diameter, and then the other half *g* extends to the other or discharge face of the wheel in a plano-curved form at an average angle of about forty-five degrees, more or less, the tangential part of the buckets being widest at the hub and gradually diminishing toward the rim. The chute *h* is in the form of a scroll extending around a little more than half the circumference, and gradually diminishing in width from the part *i*, where the water enters, to *k*, where it is discharged from the other face of the wheel, and through an aperture *l* in a plate *m*, which retains the water onto the wheel until it reaches a point vertically below the shaft, so that the weight of the column of water not only acts on the buckets during their circuit from the top to the bottom, but then acts on the inclined portion of the buckets as the pressure of the column in the chute forces the water through the buckets and out at the aperture *l* in the retaining-plate *m*. This chute is formed in two plates *n o*, which are united at a plane parallel with and intersecting the axis of the wheel to facilitate the removal of the wheel from the frame when required for repairs.

It will be obvious from the foregoing that the same principle is applicable as well to a horizontal as to a vertical wheel by simply changing the position of all the parts and retaining their relative positions. When applied to a horizontal wheel, two chutes and two discharge-holes may be used instead of one.

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

Making the wheel with buckets formed with about one half their depth parallel with the axis of the wheel and tangential to a circle smaller than the hub, (or thereabout,) and the other half at an angle therewith, when this is combined with a scroll chute on one face for the admission of the water, and a retaining-plate on the other provided with a hole for the discharge of the water opposite the end of the scroll, substantially as described.

HORACE PARSONS.

Witnesses:

WM. H. DAVIS,
EBEN. MOORE.