A. Bryce,

Water Wheel,

No. 1,831. Patented Oct. 16, 1840.

Fig. 1

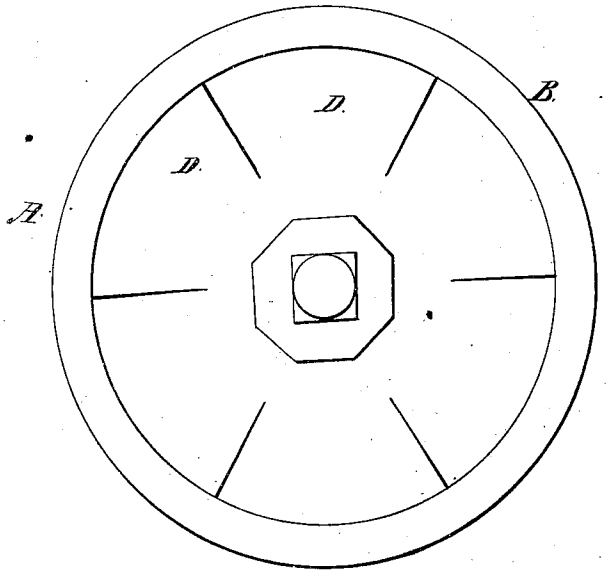
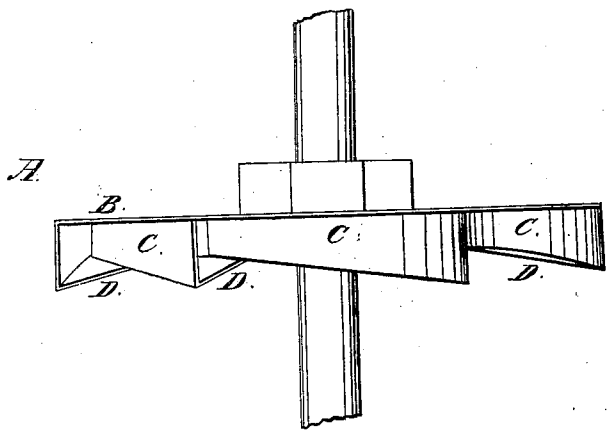


Fig. 2.



UNITED STATES PATENT OFFICE.

ARCHIBALD BRYCE, OF CAMPBELLTOWN, NEW YORK.

IMPROVEMENT IN REACTION WATER-WHEELS.

Specification forming part of Letters Patent No. **1,831**, dated October 16, 1840.

To all whom it may concern:

Be it known that I, ARCHIBALD BRYCE, of Campbelltown, Steuben county, State of New York, have invented a new and useful Improvement in the Reaction Water-Wheel, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

The nature of this invention and improvement consists in casting or otherwise forming a wheel in such a manner that the issues or discharges for the water on the lines radiating from the center shall be of a triangular shape and of the common shape in the rim or periphery, so that as the water leaves the wheel it will be thrown to the circumference thereof, from which cause and the inclined-plane form of the buckets, combined with the peculiarly-placed curved and tapered segments of the rim forming the sides of the buckets, will cause a given quantity of water to act with greater effect on a wheel of a given size constructed as above described than on any other kind of wheel heretofore known and used.

Figure 1 is a top view of the wheel. Fig. 2 is side view of the wheel.

The wheel A may be made in separate pieces secured by bolts, screws, and other fastenings, or it may be cast whole, except the rim B, which should be separate and be bolted down upon the edges of the curved segments of the buckets C, which will render the wheel very strong, and a hub or curb should be cast around the opening in the center of the wheel, which may be of a polygonal shape in order to secure the wheel more firmly to the shaft, which passes through said opening. The curved segments of buckets at the inner ends next the inner circumference of the rim are made the full depth of the wheel, and from this end it forms the segment of a circle increasing in width gradually until it meets the outer circumference of the rim, which is on a line radiating from the center of the wheel and is the outlet of the next bucket. The bottom of the bucket D, when the wheel is horizontal, is a plain inclined surface inclining two ways—namely, from the issue of the bucket to the issue next in advance and from or near the outer circumference of the curb to the circumference of the wheel. The water is confined and introduced to the wheel in the usual or most approved mode.

The effect produced by the foregoing construction of a water-wheel, as before stated, is to cause the water to act simultaneously in two directions—namely, vertically against the inclined-plane surface of the buckets and horizontally against the concave surfaces of the segment sides of the buckets and also to throw the water to the circumference as it discharges.

I do not claim as my invention the constructing of water-wheels having surfaces forming inclined planes with triangular openings for the issue of the water extending from the center to the periphery of the wheel; nor do I claim the combination of the curved segment sides with the inclined-plane surfaces, as aforesaid, but without the triangular openings or issues.

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

The combination of the inclined plane and triangular issue with the curved segment side, as herein set forth, by means of which arrangement the water is thrown to and discharged at the periphery of the wheel instead of discharging the whole distance from the center to the periphery, as heretofore, and also the triangular issues in the bottom, combined with the rectangular issues in the circumference of the wheel, as set forth.

ARCHIBALD BRYCE.

Witnesses:

HENRY PIER,

OTIS B. PARKER.