A. B. Beckwith,

Water Wheel,

No. 3,310. Patented Oct. 20, 1843.

Fig. 1

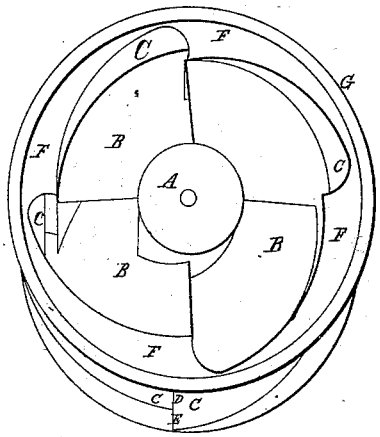


Fig. 2

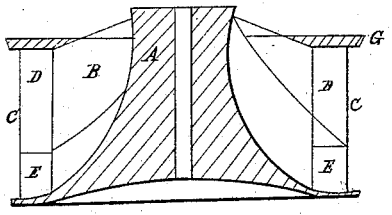


Fig. 3

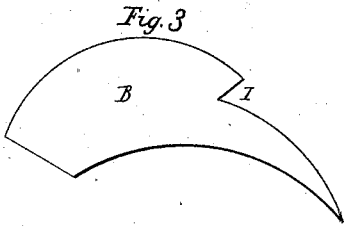
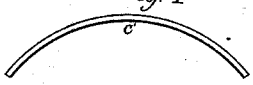


Fig. 4



UNITED STATES PATENT OFFICE.

AMASA B. BECKWITH, OF BATH, NEW YORK.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. **3,310**, dated October 20, 1843.

To all whom it may concern:

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

Figure 1 is a perspective view; Fig. 2, a vertical section; Fig. 3, one of the curvilinear buckets; Fig. 4, one of the segment-buckets.

This water-wheel consists of a bell-shaped hub A, through which the vertical or a horizontal shaft is passed. Around the outside of this hub are arranged any convenient number of curvilinear buckets B, shaped like segments of an Archimedean screw notched on the convex side, as at I, Fig. 3. Around the outer edges of said curvilinear buckets are arranged the same number of the common segment-buckets C, standing vertically or flaring on the outer part of the bell-shaped hub A, overlapping each preceding bucket about one-eighth its length and forming two issues D E at each overlap of the bucket, one of the said issues being above the curvilinear bucket and the other below it, the said curvilinear bucket B on its inner edge corresponding in shape with the outer surface of the bell-shaped hub, around which it winds and to which it is fastened, extending the whole or part of the way from the apex of the hub (which stands above the level of the outer rim of the wheel) to the base thereof or the periphery of its greatest diameter.

The outer edge of the curvilinear bucket is notched at I, Fig. 3, as before stated, to correspond with the shape of the outer vertical buckets and for discharging the water freely.

The horizontal rim F of the wheel is placed horizontally upon the upper edges of the segment or vertical buckets, extending to the outer corners of the curvilinear buckets, from which the rim is scalloped from one corner to the other of each succeeding bucket for the purpose of admitting the water freely to the wheel.

To the circumference of the aforesaid horizontal scalloped rim there is secured a flaring circular rim G, flaring upward and outward at an angle of about forty-five degrees with the plane of the horizontal rim.

The issues D E for the discharge of the water are at the circumference of the wheel and are in pairs, one above the other, the lower issue E being about half the size of the upper issue, which latter issue or opening E is nearly of a square form and contracted gradually from the upper to the lower portion thereof. The other issue D is oblong.

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

The peculiar construction and arrangement of the curvilinear or screw-shaped buckets B, in combination with the bell-shaped hub A, segment-buckets C, and scalloped and flaring rims G, as above set forth.

AMASA B. BECKWITH.

Witnesses:

W. S. MULHOLLON,

T. Q. GUELL.