

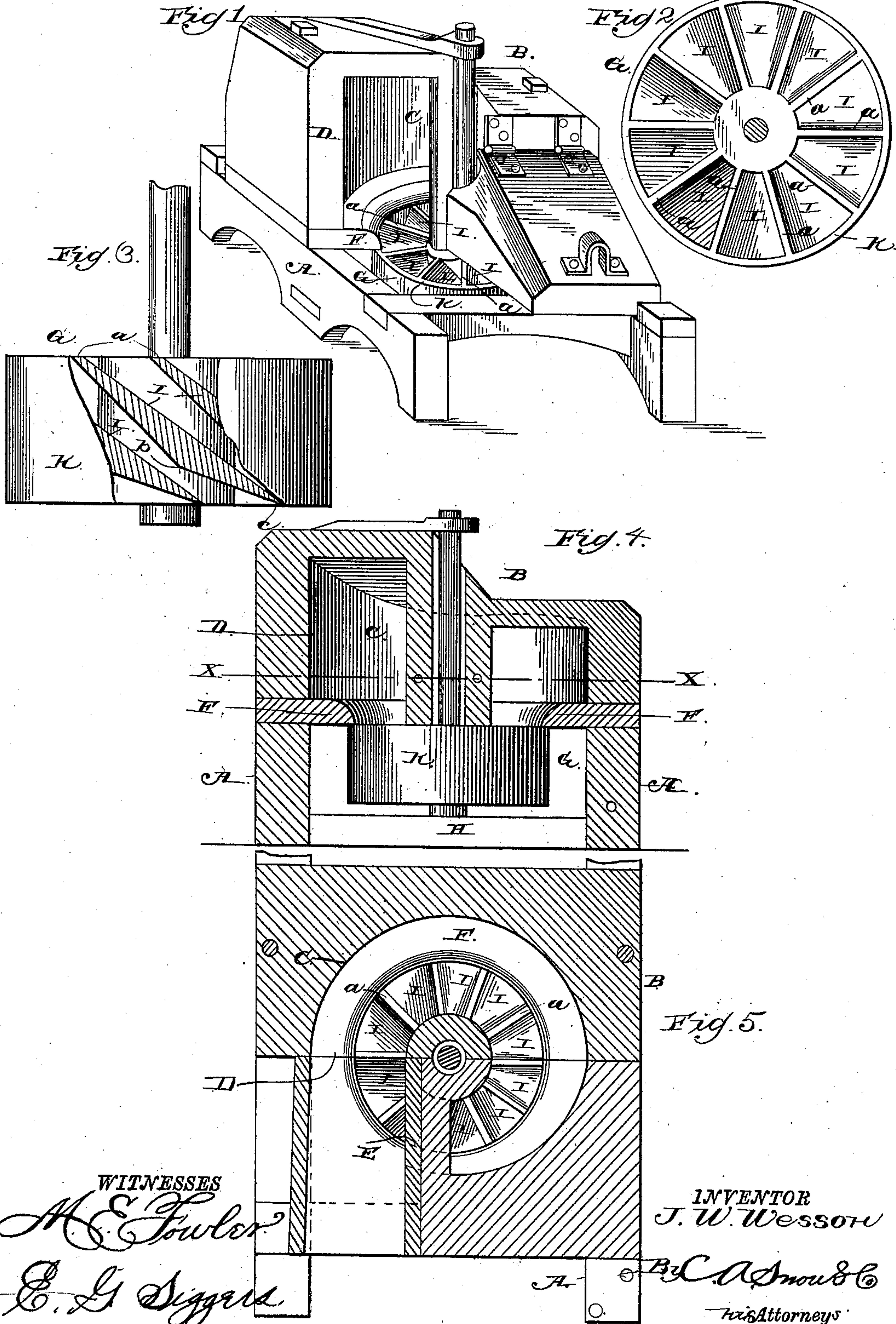
(No Model.)

J. W. WESSON.

WATER WHEEL.

No. 322,028.

Patented July 14, 1885.



WITNESSES

M. E. Fowler

E. G. Siggers

INVENTOR

J. W. Wesson

B. A. Snow & Co.

his Attorneys

UNITED STATES PATENT OFFICE.

JOHN WATKINS WESSON, OF ATTALLA, ALABAMA.

WATER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 322,028, dated July 14, 1885.

Application filed April 30, 1885. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. WESSON, a citizen of the United States, residing at Attalla, in the county of Etowah and State of Alabama, have invented a new and useful Improvement in Water-Wheels, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to an improvement in turbine water-wheels; and it consists in the peculiar construction and arrangement of devices that will be more fully set forth hereinafter, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a perspective view of a wheel embodying my invention arranged in its inclosing-case. Fig. 2 is a top plan view of the wheel detached. Fig. 3 is a detached side elevation of the wheel, partly in section. Fig. 4 is a vertical transverse sectional view of the case with the wheel therein, and Fig. 5 is a horizontal sectional view on the line *xx* of Fig. 4.

A represents the frame which serves as a support for the wheel. On the upper side of this frame is secured a case, B, which is provided with an interior curved water-way, C, which extends through about three-fourths of a circle. The entrance D to the water-way is much higher than the exit-point E, the upper side of the water-way being inclined from the point E to the point D. The lower side of the water-way is formed with an inwardly-projecting flange, F, which extends for a suitable distance from the inner side of the water way, as shown.

G represents a water-wheel, which is stepped in a cross-beam, H, of the frame, and the shaft of which extends up through and is journaled in the case B. This water-wheel is provided with radial buckets I and an outer inclosing-rim, K. The upper faces of the buckets are perfectly straight, as at *a*, and extend through the wheel at an angle of about forty-five degrees. The rear sides of these buckets are thickened near their lower ends at the point *b*, and from thence their bottom sides

are drawn at an angle of about twenty degrees to the point *c*. By this construction, it will be readily understood that the water-ways between the buckets of the wheel are wider at the upper sides thereof than at the lower edge of the wheel, and has the effect of compressing the water in the buckets, and thereby utilizes all the force thereof.

In the water-wheels now commonly constructed the face *a* of the buckets is slightly curved. I have demonstrated by actual experiment that by making this face straight and narrowing the passage between the buckets at the points *b c*, I gain an increase of power of from one-third to one-half over the water-wheels now in common use. The water-way C in the case is considerably broader than the width of the buckets of the water-wheel, and is reduced at its lower side by the flange F to the width of the buckets of the wheel. By this construction, the water-way C feeds the water to the wheel much faster than it can be discharged from the wheel, and as a consequence the water accumulates in the water-way and bears down upon the upper side of the wheel with great force. I am thus enabled to utilize not only the force but also the weight of the water on the wheel.

Having thus described my invention, I claim—

A water-wheel having buckets provided with inclined straight faces *a*, said buckets or blades being thickened near their lower ends at the point *b*, and narrowed or reduced to their lower ends at the point *c*, whereby the water ways or passages between the buckets or blades are widened at the upper side of the wheel, and narrowed near the lower side thereof, the blades presenting flared openings below the point *b*, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOHN WATKINS WESSON.

Witnesses:

ISAAC P. MERUQUE,
WILLIAM J. SIMS.