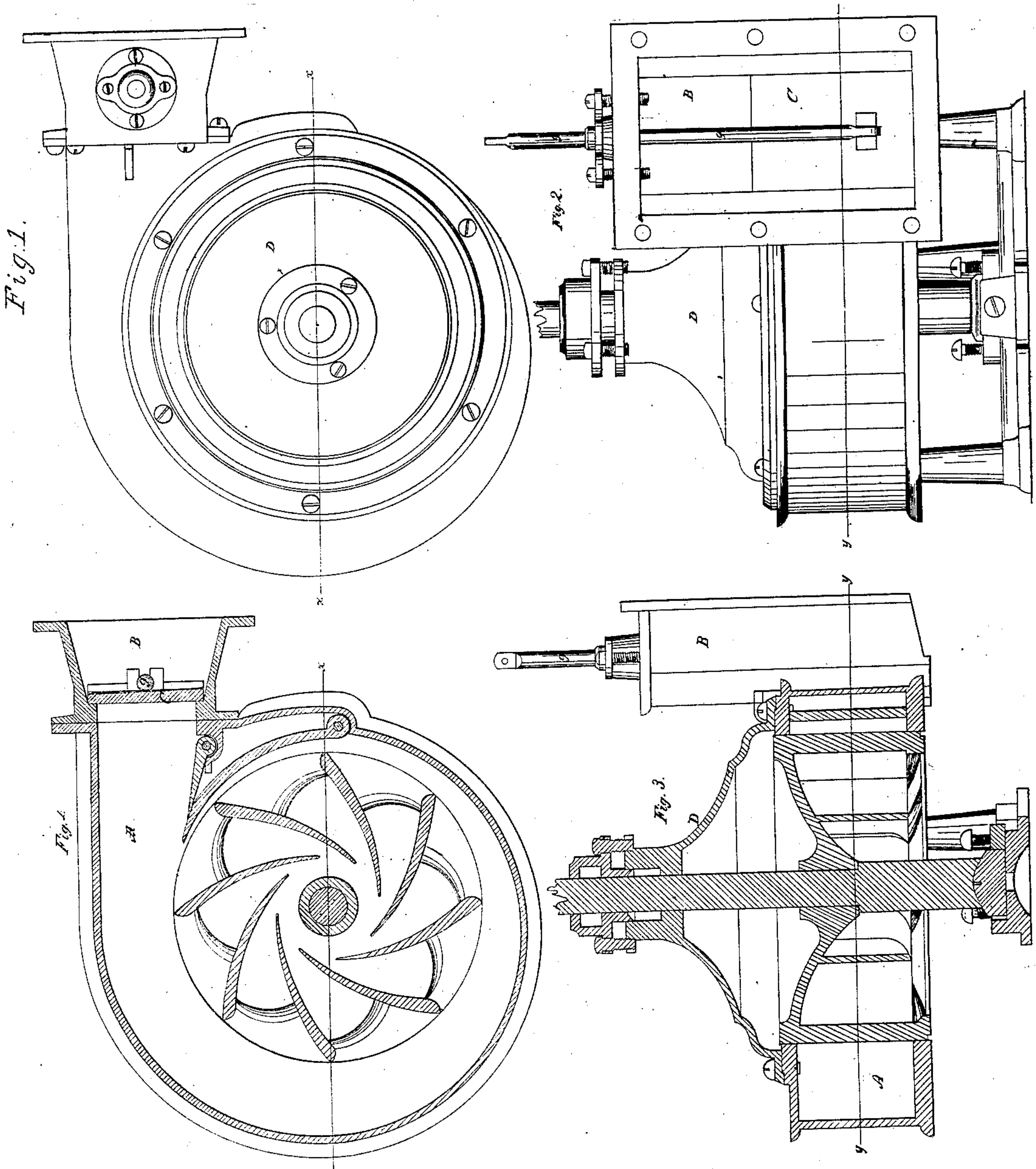


J. Tyler,
Water Wheel,

N^o 20,456.

Patented June 1, 1858.



UNITED STATES PATENT OFFICE.

JOHN TYLER, OF WEST LEBANON, NEW HAMPSHIRE.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. 20,456, dated June 1, 1858.

To all whom it may concern:

Be it known that I, JOHN TYLER, of West Lebanon, in the county of Grafton and State of New Hampshire, have invented sundry new and useful Improvements in Water-Wheels; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification—

Figure 1 being a top view of my improved water-wheel; Fig. 2, a side elevation of the same; Fig. 3, a vertical section in the line x x of Figs. 1 and 4, and Fig. 4 a horizontal section in the line y y of Figs. 2 and 3.

Similar letters indicate like parts in each of the drawings.

My first improvement in water-wheels is applicable solely to a wheel whose buckets descend from a close head which works within a horizontal water-way. The said improvement consists in combining a considerably-elevated cover D with the flanged upper edge of the casing of the aforesaid water-wheel in such a manner as to form an air-tight joint between the two and then combining an annular packing-box with the flanged periphery of the aperture in the apex of said cover for the shaft of said wheel to work in. The said improvement, in the first place, forms an air-tight chamber above the head of the water-wheel, which enables it to be operated without loss of power when entirely immersed in backwater, and, in the second place, the said improvement furnishes an upper supporting-bearing to the shaft of the water-wheel, which enables it to be connected directly with the machinery to be propelled thereby without the aid of auxiliary shafting or journal-boxes.

My second improvement in the aforesaid water-wheel consists in combining with the mouth of the water-way A of said wheel a flanged gate-box B, which is supplied with a sliding gate C, whose stem g works in a packing-box in a suitable aperture in the top or side of said box, which improvement adds greatly to the completeness and value of my

improved water-wheel, as it enables any desirable number of said wheels to be combined with a wooden water tube or trunk and then to be operated independently of each other, an arrangement that could not be effected with water-wheels which did not possess flanged gate-boxes and sliding gates as essential component parts of said wheels.

The aforesaid improvements are so clearly represented in the accompanying drawings that a precise description of every bolt, rivet, &c., employed in the construction of the same and in their combination with water-wheels is not deemed necessary.

For a clear representation and description of the other features of my improved water-wheel reference may be had to the patents issued to me and bearing the following dates, viz., May 22, 1855, and July 8, 1856.

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

1. Combining an elevated air-tight cap with the casing and shaft of a water-wheel whose buckets descend from a close head for the purpose of enabling said wheel to be operated without loss of power when entirely immersed in backwater and also for the purpose of furnishing an independent upper bearing to the shaft of said wheel of so firm a character as to enable said wheel to be connected directly to the machinery to be propelled thereby without any auxiliary shafting or journal-boxes, substantially as herein set forth.

2. Combining the flanged box of a sliding gate with the mouth of the water-way of my improved water-wheel for the purpose of enabling a number of said wheels to be readily bolted to a wooden water tube or trunk and to be operated independently of each other, substantially as herein set forth.

The above specification of my improvement in water-wheels signed and witnessed this 4th day of February, 1858.

JOHN TYLER.

Witnesses:

JOSIAH GEORGE,
RODNEY LUND.