

J. N. & L. M. ASBURY.  
Turbine Water-Wheels.

No. 136,298.

Patented Feb. 25, 1873.

Fig. 1.

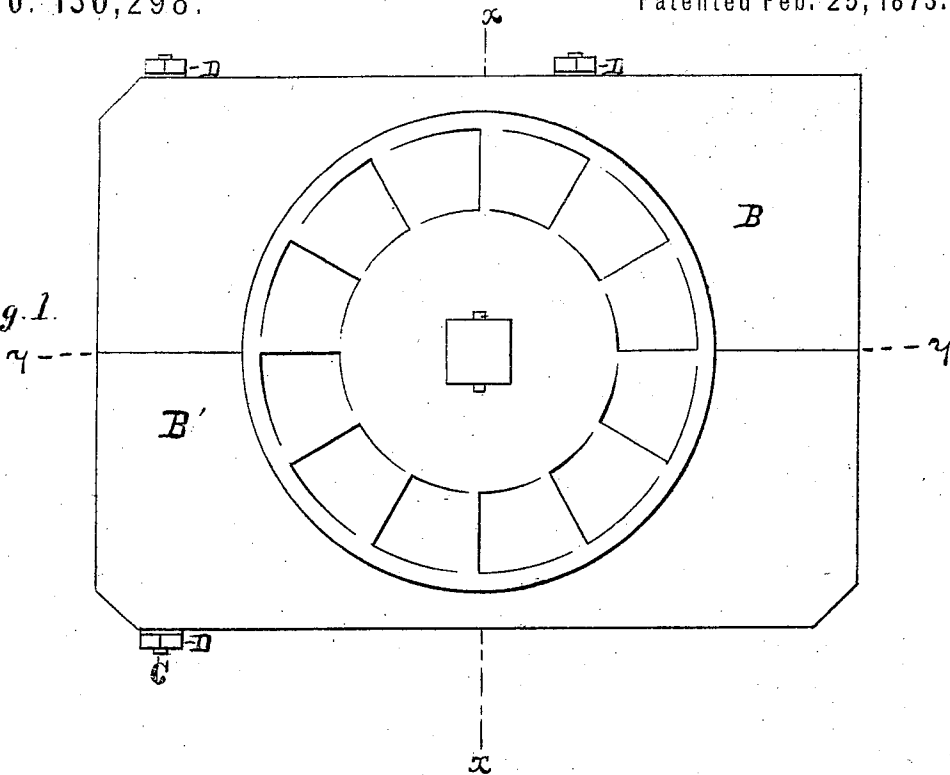
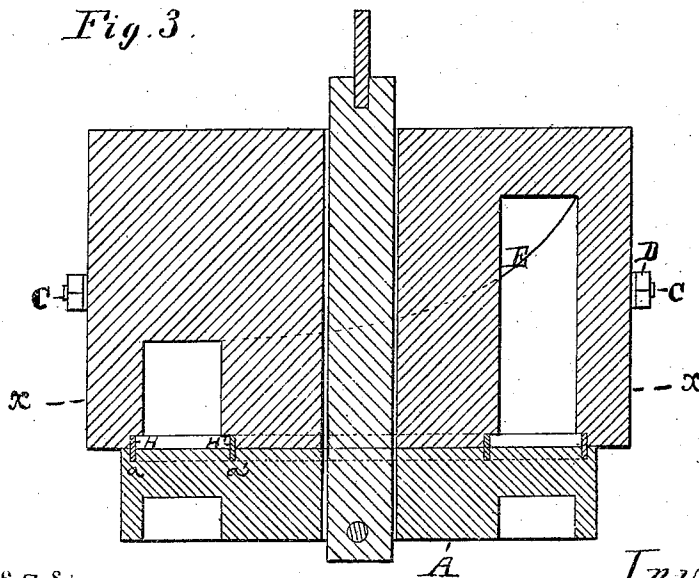


Fig. 3.



Witnesses:

E. A. Bates.

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Inventors

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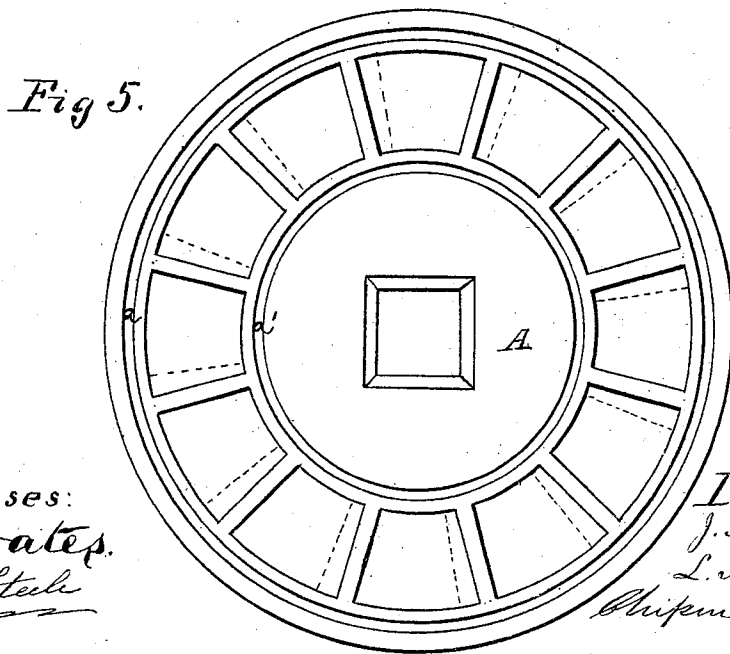
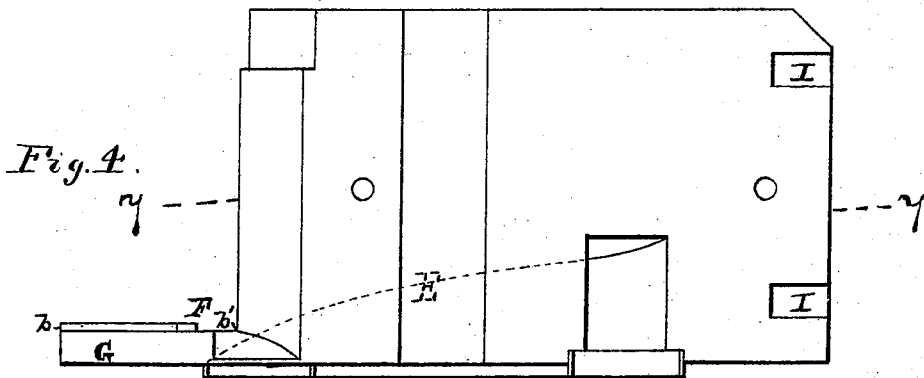
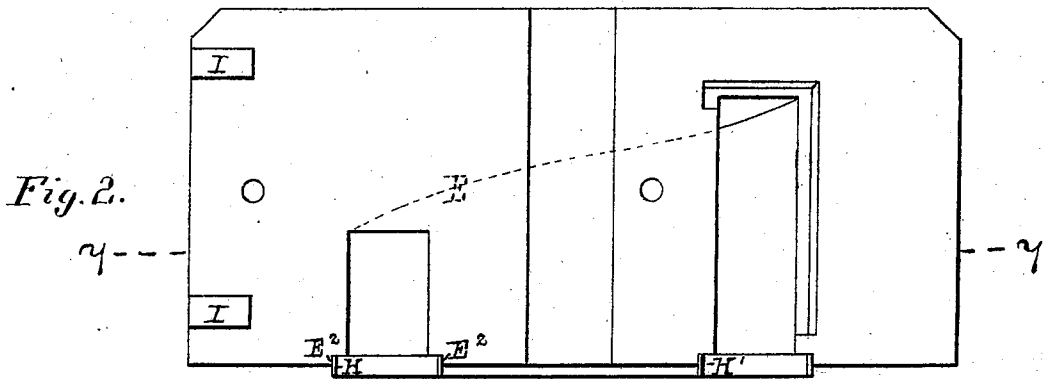
Chipman Hosmer & Co.

Attys

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# UNITED STATES PATENT OFFICE.

JOSEPH N. ASBURY AND LEONIDAS M. ASBURY, OF ROCKLAND MILLS, KY.

## IMPROVEMENT IN TURBINE WATER-WHEELS.

Specification forming part of Letters Patent No. 136,298, dated February 25, 1873.

*To all whom it may concern:*

Be it known that we, JOSEPH N. ASBURY and LEONIDAS M. ASBURY, of Rockland Mills, in the county of Metcalfe and State of Kentucky, have invented a new and valuable Improvement in Applying and Confining Water to Tub or other Water-Wheels; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a bottom view of our tub-wheel. Figs. 2, 4, and 5 are details of same. Fig. 3 is a sectional view of same.

This invention has relation to turbine water-wheels; and the novelty consists in constructing the casing or flume of two wooden blocks having at their lower inner surface metallic flanges secured to offsets at the sides of a groove, and the turbine wheel having its rim and hub grooved to receive the said metallic flanges to prevent the escape of water between the blocks and wheel, as hereinafter described.

Referring to the drawing, A designates the wheel, having its rim and hub grooved at *a a'*. B B' designate the two blocks composing the casing, secured together by means of transverse bolts C, holding-nuts D, and channeled out underneath to produce the scroll-groove E extending the whole way around the wheel, and adapted to conduct the water to all the buckets at one and the same time, thus producing an even pressure and equal discharge.

The block B is recessed at one end, as shown at F. The wall or side of this recess is tangential to the inner wall of the scroll-groove, and is used as one of the walls of the flume which conveys water to the wheel. The planks composing the balance of the flume are fitted into offsets formed at *b b<sup>1</sup> b<sup>2</sup>* in the blocks B B', as shown. G is a cleat for supporting the side plank of the flume. H H' denotes metallic flanges secured to offsets at the sides of the groove E<sup>2</sup>, and fitting the grooves *a a'*, in order to prevent the escape of water between the blocks and wheel. I represents splines inserted between the ends of the blocks to prevent them from working out of place.

The casing herein described may be constructed at less expense than the metallic casings now in use. Being in two parts, ready access for cleaning and repairs may be had to the scroll-groove, as the blocks may be separated by removing the nuts from the bolts.

What we claim as our invention, and desire to secure by Letters Patent, is—

The blocks B B' holding the metallic flanges H H', in combination with the turbine wheel A, having the rim and hub grooved at *a a'*, substantially as specified.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

JOSEPH N. ASBURY.  
LEONIDAS M. ASBURY.

Witnesses:

WILLIAM O. NEWMAN,  
EUGENE GIESKER.