

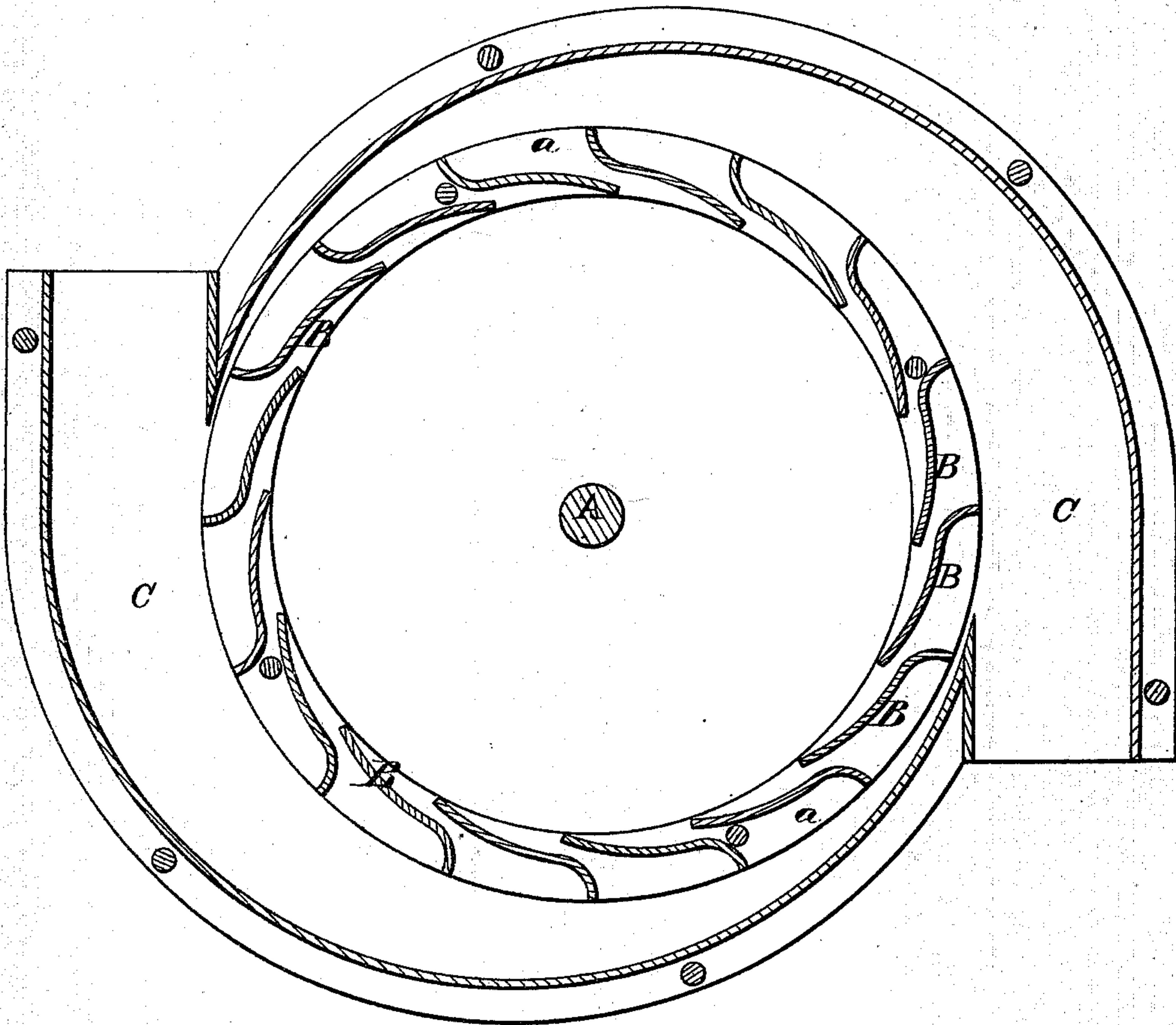
2 Sheets--Sheet 1.

**J. B. HAMILTON.**  
**Water-Wheels.**

No. 146,068.

Patented Dec. 30, 1873.

*Fig. 1*



*Witnesses:*  
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*Villette Anderson.*

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*John B. Hamilton,*  
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Fig. 2

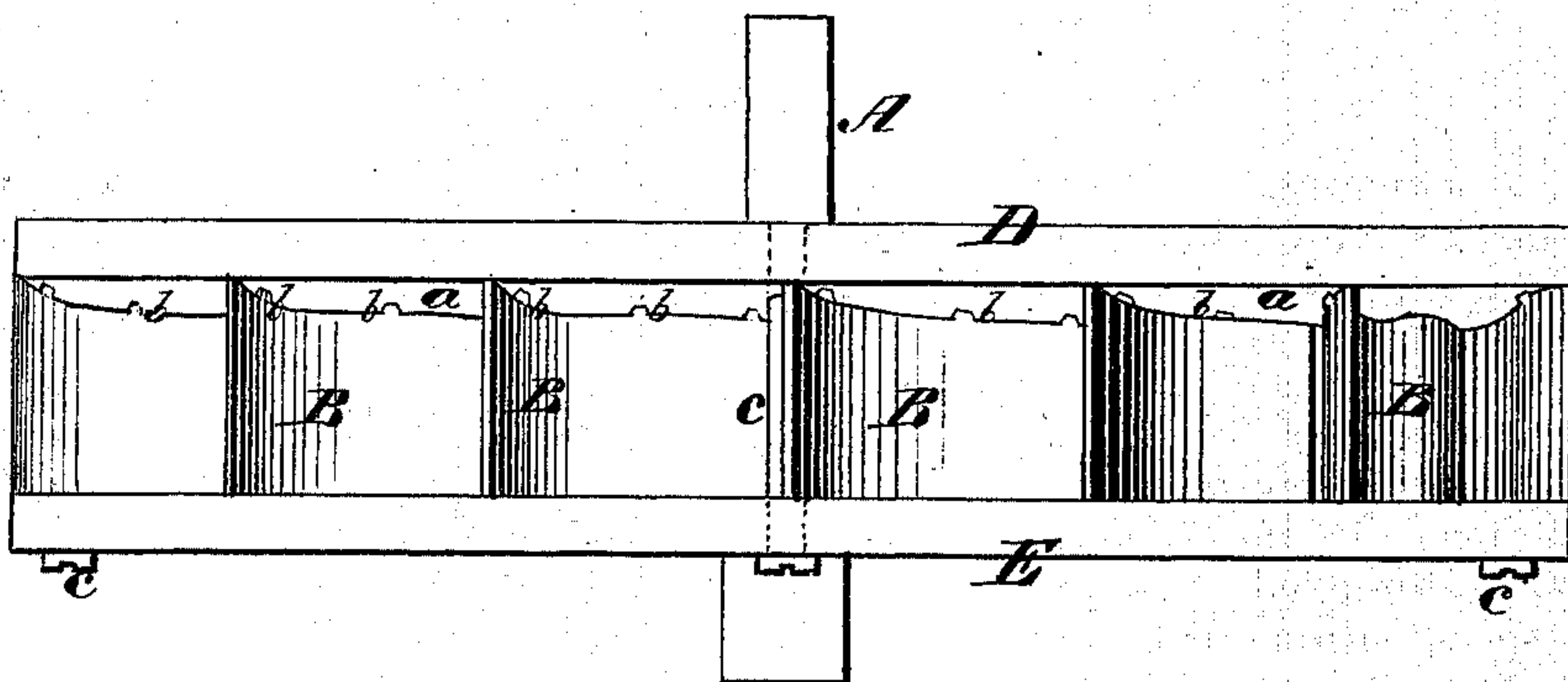


Fig. 3

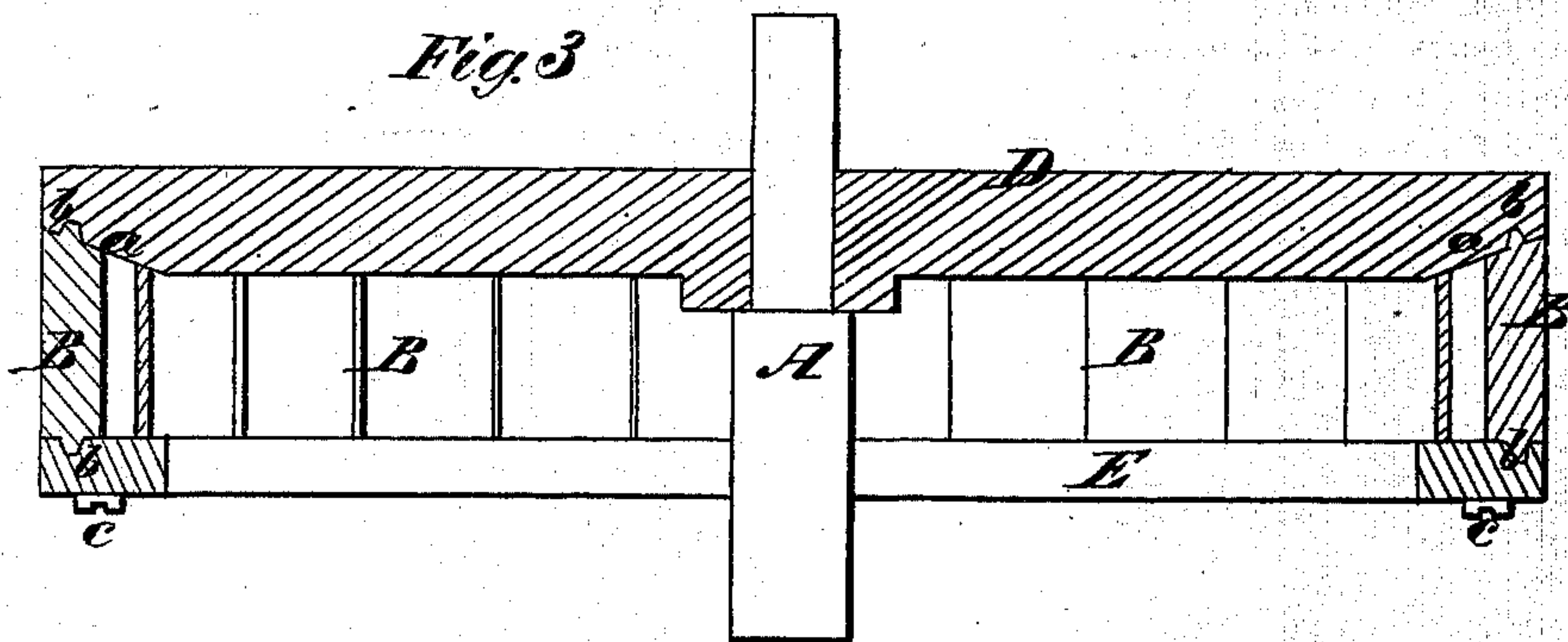
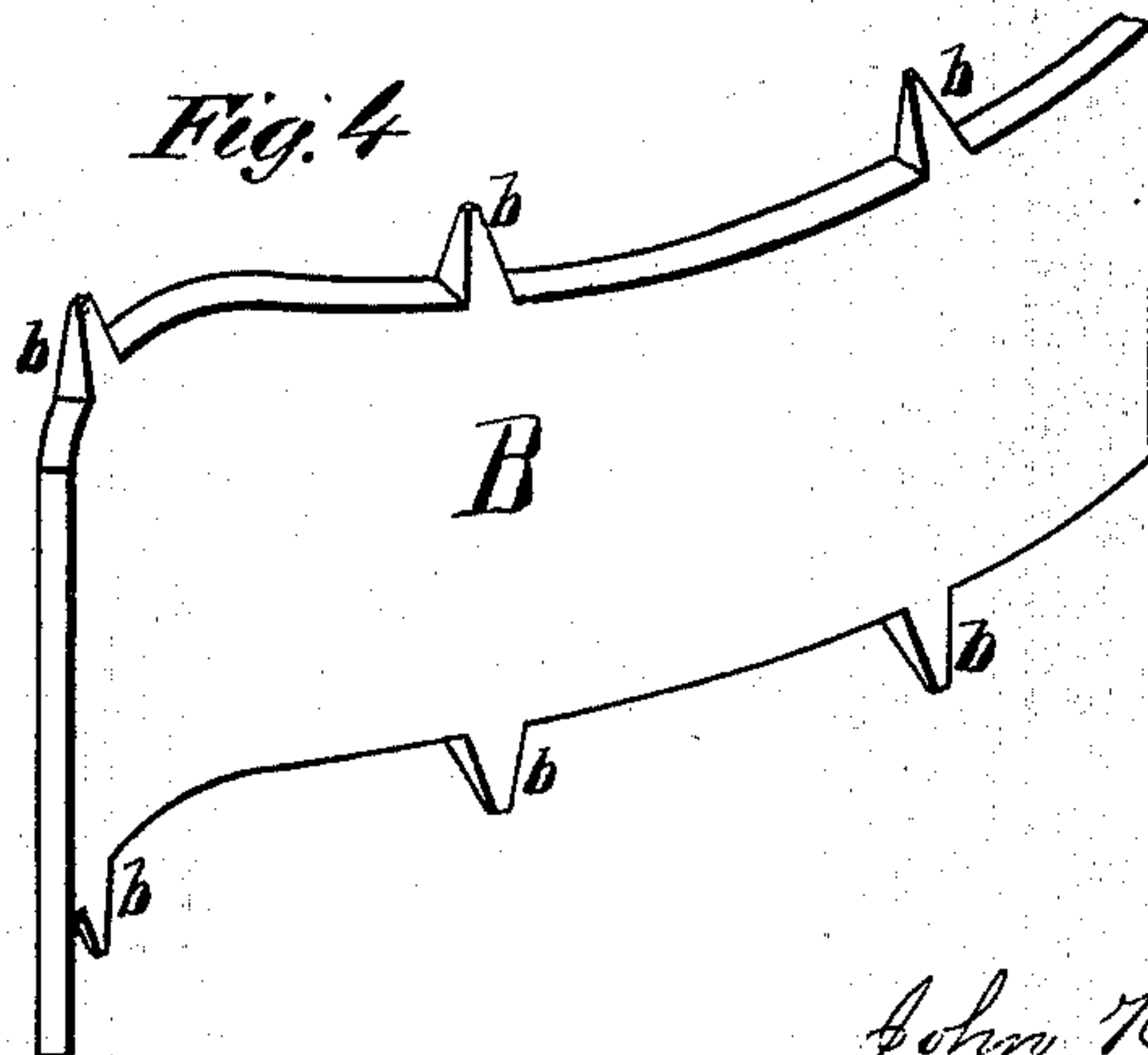


Fig. 4



WITNESSES  
*E. H. Bates.*  
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By

INVENTOR  
*John B. Hamilton,*  
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# UNITED STATES PATENT OFFICE.

JOHN B. HAMILTON, OF LOUDON, TENNESSEE.

## IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. **146,068**, dated December 30, 1873; application filed February 8, 1873.

*To all whom it may concern:*

Be it known that I, JOHN B. HAMILTON, of Loudon, in the county of Loudon and State of Tennessee, have invented a new and valuable Improvement in Water-Wheels; and I 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 drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a horizontal section of my water-wheel.

This invention has relation to horizontal center-discharge water-wheels, wherein the water is directed against the buckets by means of scroll-shaped chutes.

The nature of my invention consists in constructing the spurred buckets with beveled or inclined upper edges, in combination with an inclined or beveled surface formed on the lower side of the top rim of the wheel, for a purpose hereinafter explained.

The following is a description of my improvements:

In the annexed drawings, C C represent two scroll-shaped chutes, forming part of the wheel-case, and serving to conduct water against the buckets B. These two chutes occupy the entire circumference of the wheel, and supply the water uniformly from all directions, so as to nicely balance the forces acting on the wheel.

The wheel is composed of a horizontal top disk, D, a horizontal bottom ring, E, and buckets B, secured together as follows: In casting or otherwise forming the buckets, I construct spurs or lugs *b* on their upper and lower edges, which spurs are preferably of ta-

pered or wedge form, and are arranged at or near the ends of the buckets and in the middle thereof, as shown by Fig. 4.

In casting the disk D and ring E, I form holes into their surfaces, corresponding in their arrangement to the required position of the buckets in the wheel, and to the number of spurs *b* on the buckets.

It will now be seen that when the buckets are all adjusted in their places, and the disk and ring are firmly secured by bolts *c*, the buckets will be rigidly held by their spurs.

Should any one or more of the buckets be broken they can be readily removed by loosening the nuts on bolts *c*, and other buckets adjusted in their places.

It will be seen that the disk D is constructed with a beveled surface, *a*, flaring upwardly and outwardly, for the purpose of having the spaces between the buckets largest at their entrance, and thus greatly increasing the impact of the water on the wheel.

My buckets are made to fit snugly to this inclined surface *a* by beveling their upper edges—that is to say, I taper the buckets, as shown in Fig. 2, to correspond to such beveled or inclined surface.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The tapered and spurred buckets B, combined with the beveled surface on the disk D, as and for the purposes described.

JOHN B. HAMILTON.

Witnesses:

T. W. BURGE,  
R. K. ROBINSON.