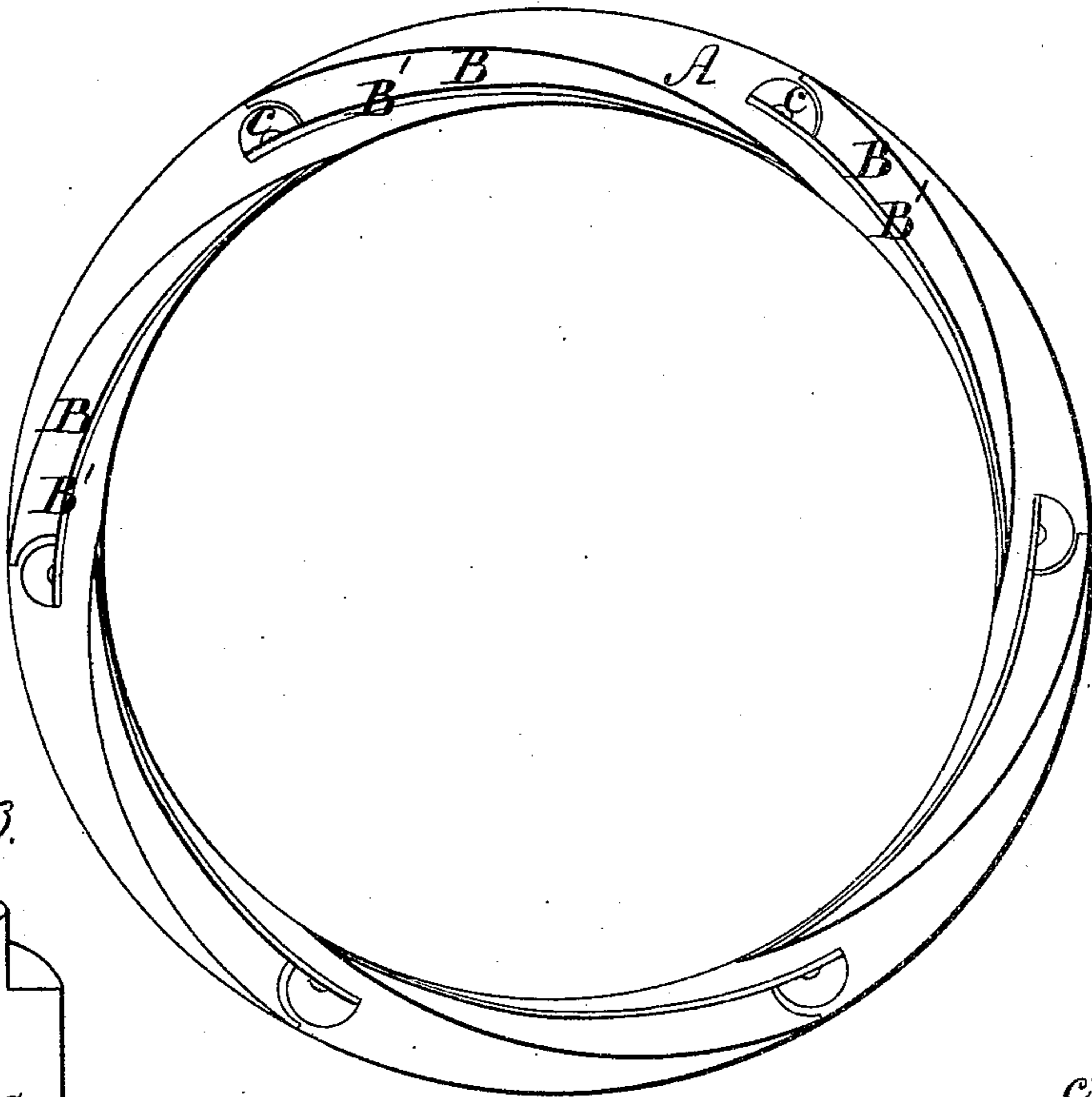


*T. W. Mahler.*

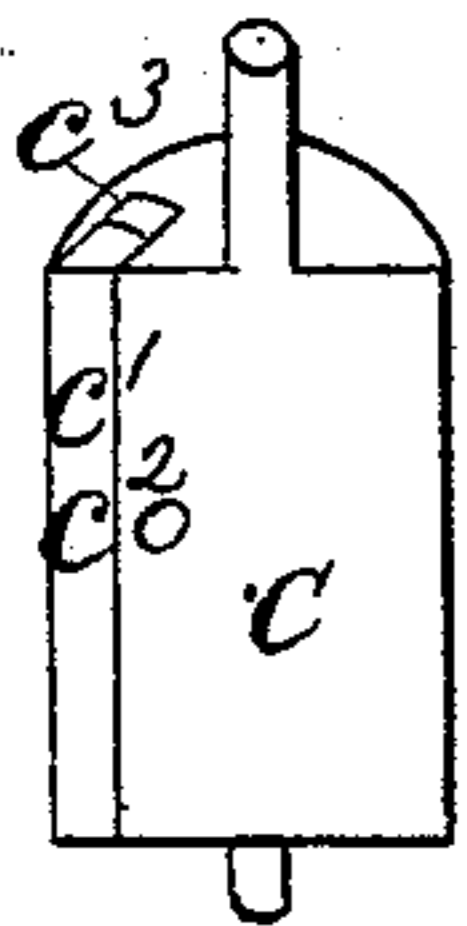
*Turbine Water Wheel.*

*N<sup>o</sup> 89,674. Patented May 4, 1869.*

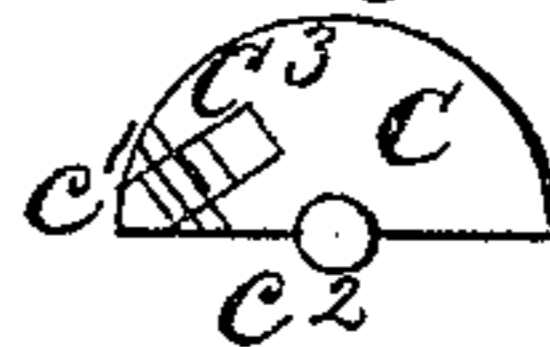
*Fig. 1.*



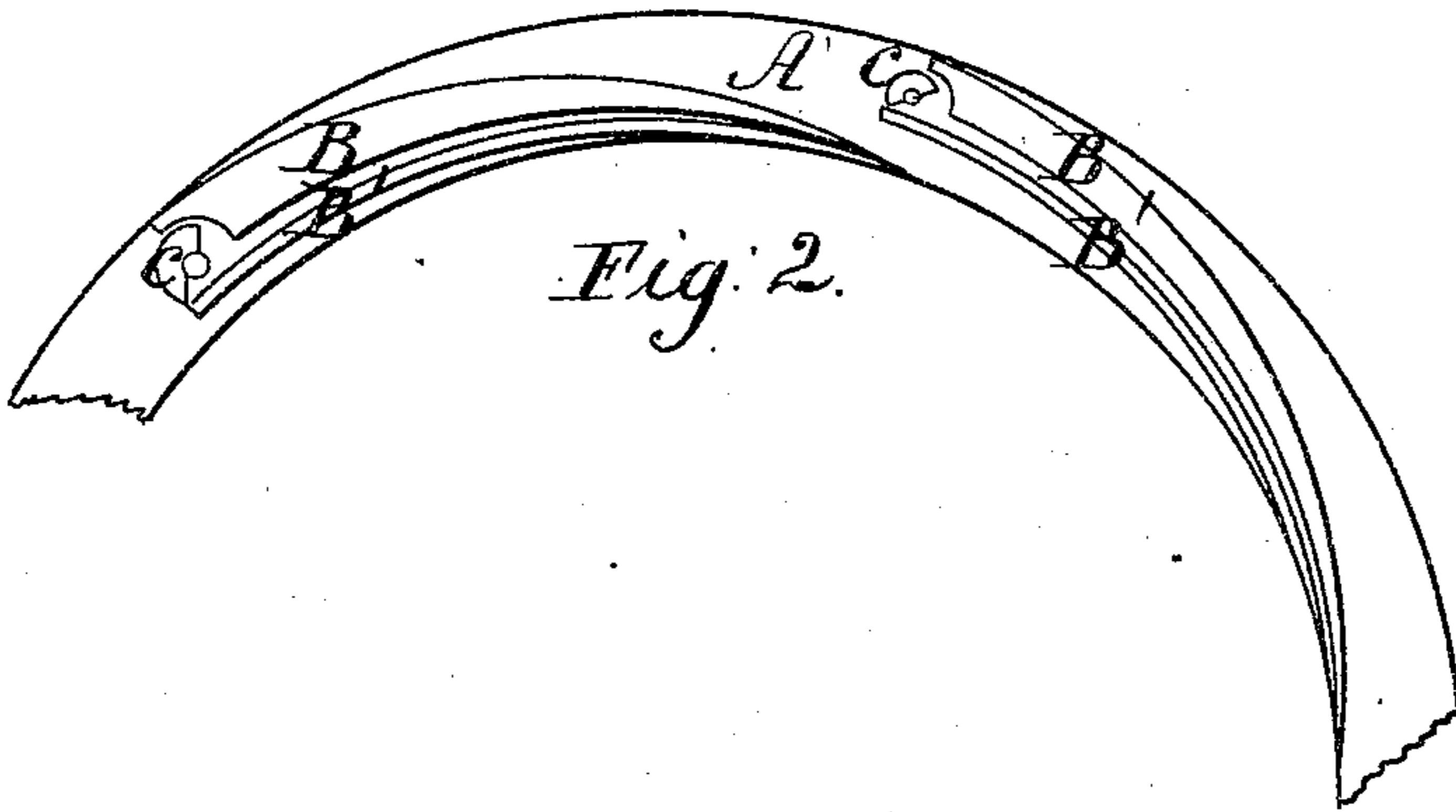
*Fig. 3.*



*Fig. 4.*



*Fig. 2.*



*Witnesses;*

*John P. Seymour*

*John G. Crocker*

*Inventor;*

*T. W. Mahler*

# United States Patent Office.

THEODORE W. MAHLER, OF ROME, NEW YORK.

*Letters Patent No. 89,674, dated May 4, 1869.*

## IMPROVED GATE FOR WATER-WHEELS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, THEODORE W. MAHLER, of Rome, Oneida county, New York, have invented a new and useful Improvement in Water-Wheels.

The nature of my improvement consists in the construction and arrangement of the gates and guides of a horizontal central-discharge water-wheel.

And I do hereby declare that the following is a full, clear, and exact description of my said invention, and of the mode of operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 represents a plan of the gates and guides, with the under plate, or rim.

Figure 2, the gate as closed and partially opened.

Figure 3, a perspective view of the gate.

Figure 4, an end view thereof.

A is the lower plate, or rim.

B, the fixed part of the guides.

B', the inner elastic part.

C, the gate.

C<sup>1</sup>, extension-part of the gate.

C<sup>2</sup>, pin for holding same in place.

C<sup>3</sup>, India-rubber spring.

The guides and gates are placed between an upper and lower rim, which closely surround the wheel in the usual way. The guides are in two parts. The outer one, B, is fixed, and the inner one, B', is of plate steel, or other proper elastic material, and attached to B at its inner end, while its front end being free, it may be moved in or out by the turning of the gate. The front inner corner of the fixed part is cut away a quarter of a circle, in which is placed the gate. The inner part, B', extends outward to the edge of the gate, as seen in the drawings.

The gate is a half cylinder, turning on bearings at either end at the edge of the plane face, as seen in the drawings. The upper bearing extends through the upper plate, and to which is attached the proper means for turning the gate. Of course all the gates may be attached together, and be operated by one movement, in any of the well-known ways.

The outer edge of the gate has inserted therein a movable part, C<sup>1</sup>, which forms an extension of the gate. The pin C<sup>2</sup> holds it in place, while the slot therein allows it sufficient play. Behind this extension is an India-rubber spring. The purpose of this arrangement is to insure at all times a close fit of the gate, and, when a hard substance gets between the gate and the guide, it will allow all the other gates to close.

The operation and value of guides and gates so constructed will be obvious from the description given. The gate, turning as it does, presents the least possible impediment to its movement, and the inner, elastic part of the guide B' presents at all times a scroll-formed passage to the wheel, varying in width according as the gate is open, and presenting nowhere any impediment to the free passage of the water.

Having thus described my invention,

What I claim therein as new, and desire to secure by Letters Patent, is—

The gate C, in combination with the guides B and B', all constructed and operating substantially as described.

T. W. MAHLER.

Witnesses:

JOHN G. CROCKER,  
JOHN F. SEYMOUR.