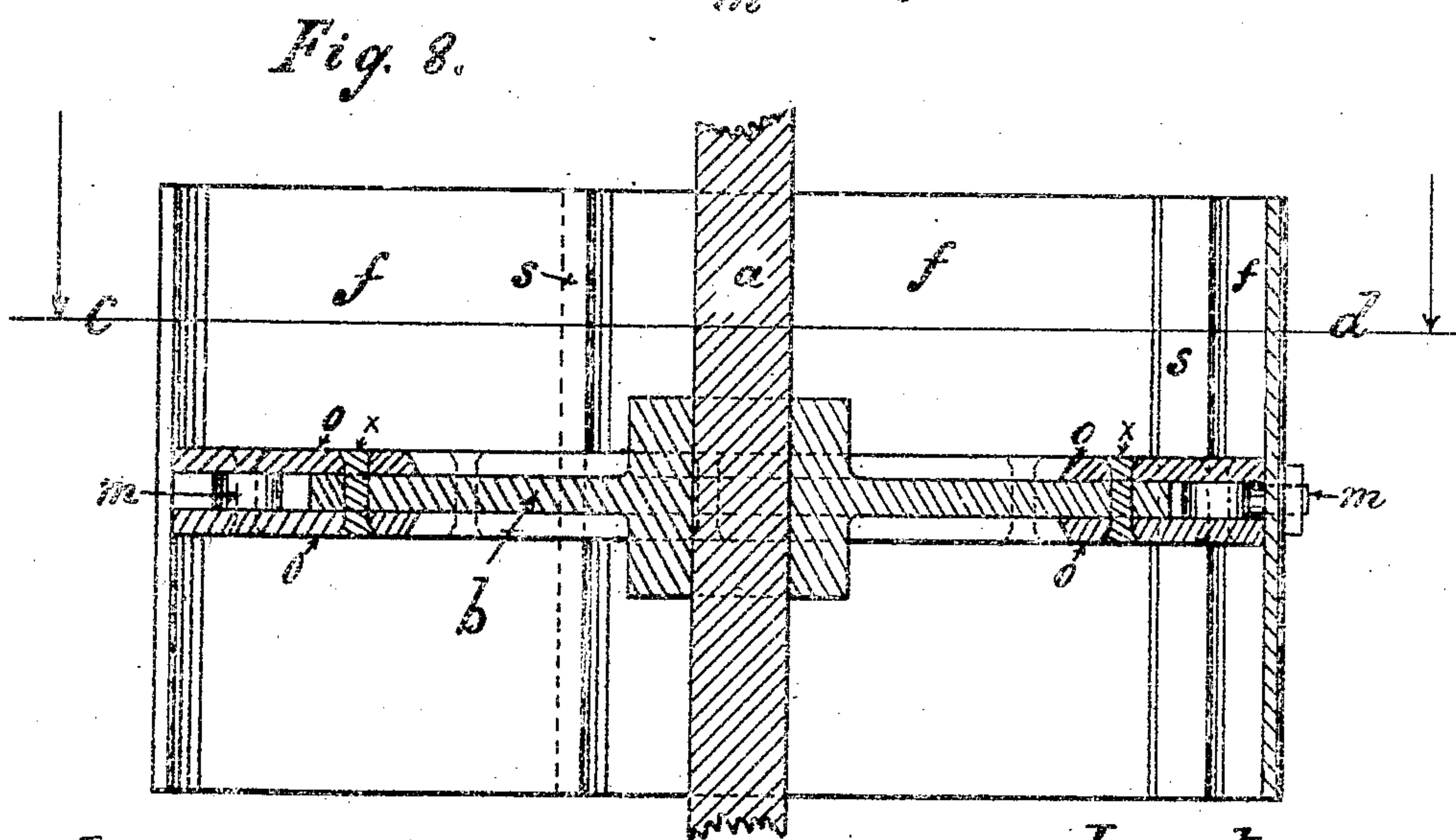
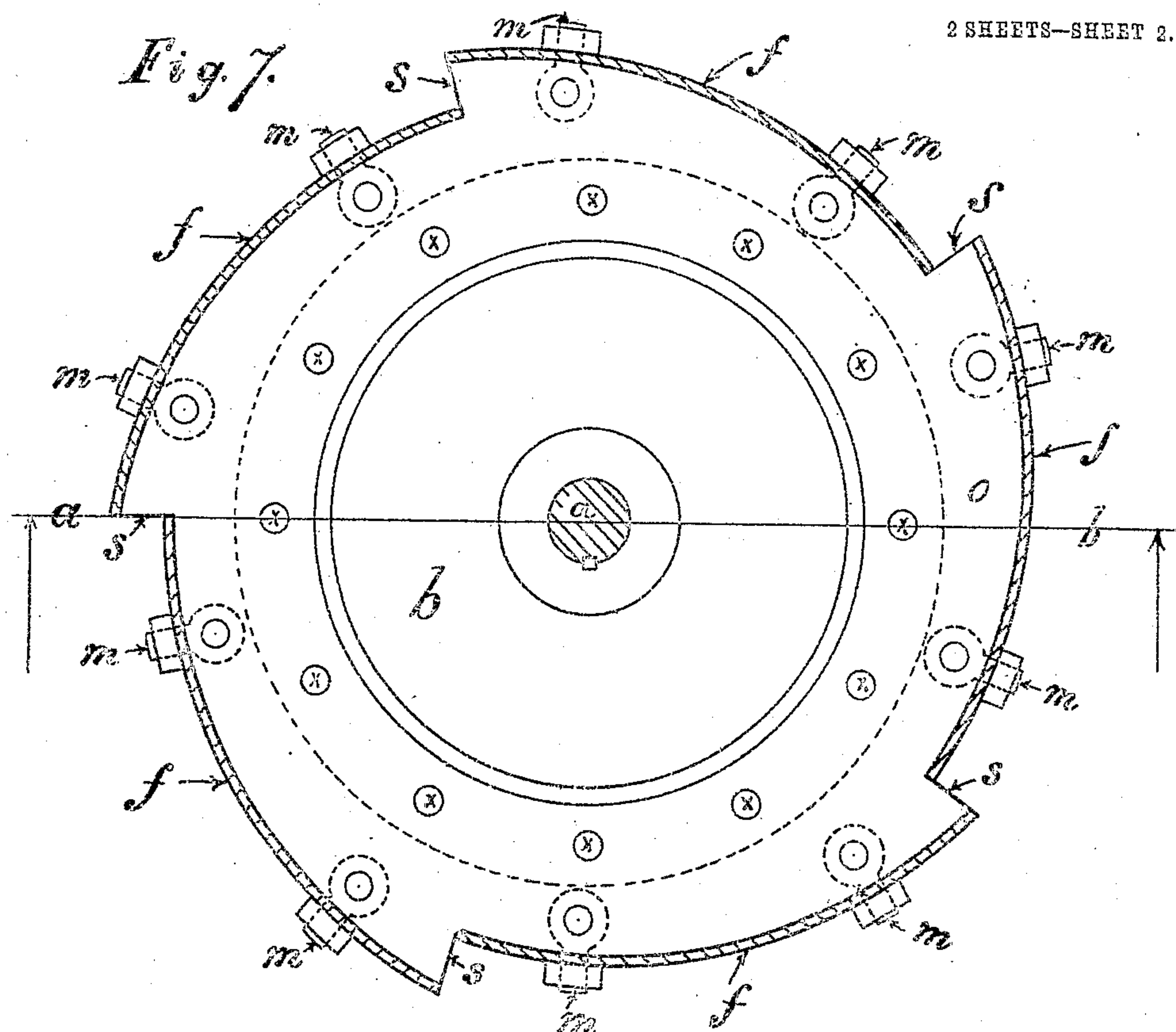


No. 786,617.

PATENTED APR. 4, 1905.

C. O. ANTHONY.
TURBINE WATER WHEEL.
APPLICATION FILED JUNE 4, 1903.

2 SHEETS—SHEET 2.



Witnesses.
Lucinda Mosher
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UNITED STATES PATENT OFFICE.

CLARENCE O. ANTHONY, OF KENNETCOOK CORNER, CANADA.

TURBINE WATER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 786,617, dated April 4, 1905.

Application filed June 4, 1903. Serial No. 159,985.

To all whom it may concern:

Be it known that I, CLARENCE O. ANTHONY, a British subject, residing at Kennetcook Corner, in the county of Hants, in the Province of Nova Scotia and Dominion of Canada, have invented a new and useful Turbine Water-Wheel, of which the following is a specification.

My invention relates to that class of turbine water-wheels in which the water enters axially and is discharged tangentially at the circumference; and the objects of my invention are to produce a cheaper, more powerful, and more economical wheel than any now in use. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the case inclosing the wheel. Fig. 2 is a plan of the same. Fig. 3 is an elevation of the right-hand end, showing the intake and the position of the conduit-coupling bolts. Fig. 4 is a section of the case on line *a b* of Fig. 1. Fig. 5 is an interior elevation of the case with one section removed. Fig. 6 is a section on line *c d* of Fig. 1 with the wheel in position. Fig. 7 is an elevation of the wheel in section, on an enlarged scale, on line *c d* of Fig. 8. Fig. 8 is a section on line *a b* of Fig. 7.

Similar letters refer to similar parts throughout the several views.

In the drawings, A and B are the two sections of the wheel-case, the joint on Fig. 2 being indicated by the line *e f*.

E E are the water-chambers from which the water enters the wheel in the direction of the arrows *e* in Fig. 6.

F is the wheel-chamber in which the wheel revolves and into which the water from the wheel is discharged.

C is the stuffing-box gland.

D D are the bearings.

a is the shaft on which the wheel is secured and which passes out through the stuffing-box gland C.

b is the dividing-plate, which is secured to the shaft *a*.

o o are two forming-rings, which are secured one on each side of the dividing-plate

by the rivets *x x* and project beyond the circumference of said plate a sufficient distance for the insertion of the eyebolts *m m* between them. The edges of these rings are serrated to form the seats for the blades *f f f*, which are held in place by said eyebolts *m m*. The curved blades *f f f* are made of metal plates. They are set eccentric to the shaft and project equal distances on each side of the dividing-plate *b*, thus forming two separate compartments in one wheel. By this method of contraction the pressure in one compartment is neutralized by the pressure in the opposite one, which entirely prevents end thrust of the shaft.

s s s are the vents through which the water from the wheel runs into the wheel-chamber F.

i i are the partitions, which separate the water-chambers E E from the wheel-chamber F and which converge near the connection to the conduit, meeting at *w*.

The operation of the wheel is as follows: The water flowing toward the wheel from the conduit is divided at the intake by the apex *w* of the wheel-chamber, passing into each of the water-chambers E, and from thence into each compartment of the wheel in the direction indicated by the arrows *e* and discharging into the wheel-chamber F through the vents *s s s* in the direction indicated by the arrows *e*, and finally leaving the wheel by the outlet *v* in the direction of the arrows *n*, the water in its egress through the said vents causing the wheel to revolve with a velocity proportioned to the pressure, the angularity of the blades, and the area of the discharge.

I am aware that water-wheel cases composed of two parts are not new, and I therefore do not broadly claim such as my invention.

What I do claim, and desire to secure by Letters Patent, is—

1. In a water-wheel a disk secured to a shaft at right angles thereto, two forming-rings each having corresponding eccentric serrations in its periphery and attached one to each side of said disk with their serrations projecting beyond its circumference, eyebolts secured in the space between said forming-rings,

and blades set at right angles to said disk and held in engagement with said serrations by said eyebolts; substantially as described and set forth.

- 5 2. In a water-wheel, a centrally-arranged disk, eccentric blades centrally attached to the periphery of said disk at right angles to its plane of rotation, in combination with a shaft carrying said disk, and a case supporting said

shaft; substantially as described and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CLARENCE O. ANTHONY.

Witnesses:

HUGH MACKENZIE,
WM. M. FERGUSON.