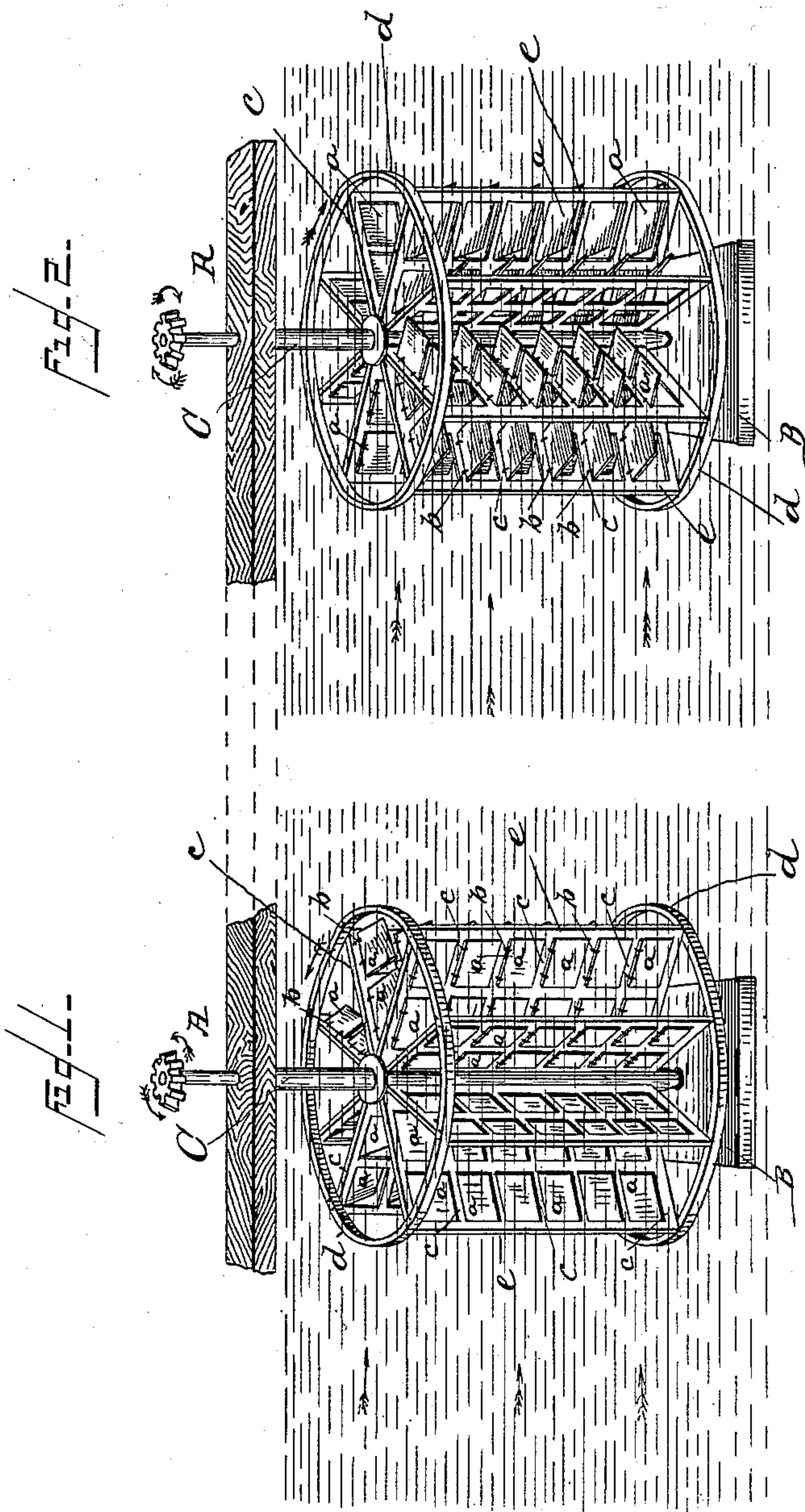


(No Model.)

F. LE BEAU.
WATER WHEEL.

No. 401,751.

Patented Apr. 23, 1889.



Witnesses.

H. D. Kealy.

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UNITED STATES PATENT OFFICE.

FREDERICK LE BEAU, OF BUFFALO, NEW YORK.

WATER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 401,751, dated April 23, 1889.

Application filed July 13, 1888. Serial No. 279,819. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK LE BEAU, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Water-Wheels; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to submerged water-
15 wheels for large or small streams of running water, and where turbines, overshot, and other wheels commonly employed cannot be used on account of backwater, the object being to get the power of a stream (more or less) for
20 moving the wheel or wheels, and which will run at the same rate of speed as the stream; and the invention as constructed and applied will be understood by reference to the following specification and claim.

25 In the drawings, Figure 1 represents my wheel in position, the current working against the valves on the right-hand side and which are closed by the current against them, which thus carries the wheel around, the valves on
30 the left-hand side opening and floating on the stream until they are again closed, and so on continually. Fig. 2 represents a similar wheel with its valves reversed in position on the frames from those shown in Fig. 1, being mere-
35 ly hung on the opposite side of said frames, so that if two or more wheels are placed in line, as indicated in the drawings, they would each receive the full force of the water, one moving around by the right and the other by
40 the left hand, as indicated by arrows in connection with the gear-wheels shown at top of shaft.

A represents the water-wheels, constructed substantially as follows: C is a vertical shaft,

the lower end setting and working in any suit- 45
able bearing or base-piece, B, set or fastened on the bottom of a stream. The upper end of the shaft will be properly geared to connect with shafting for transmitting the power ob-
tained by the wheel. A circular frame-work 50
of steel surrounds this shaft C, consisting of two or more rings, *d d*, attached to arms *c c c*, radiating from the center or shaft, and with vertical posts or rods *e e e* dividing the space into valve-openings, which are covered by
55 valves *a a a*, hung or hinged to the arm *c* above it, as at *b b b*, making them into flap-valves, which close against the arm *c* immediately below it by being made to overlap said arm, so that when the current strikes the valves it forces
60 the wheel to revolve longitudinally, the valves gradually rising and floating as the impact of the water decreases, they all automatically closing and opening by the action of the stream revolving the wheel, the open valves or valve-
65 openings allowing the water to run through freely without resistance on that side.

I claim—

In a water-wheel, A, the vertical shaft C, its upper end working through a suitable bearing 70
and having a gear-wheel thereon, its lower end working in a bearing in the base-piece B, the frames *c c c*, radiating from the said shaft, divided by a vertical strip and longitudinal strips into a series of valve-openings covered
75 by flap-valves *a a a*, attached to the top of valve-openings at *b*, the flaps on one side of the shaft opening on one side of the frame, and the flaps on the other side of shaft opening on opposite side of frame, the outer end
80 of the frames being secured to circular rings or hoops *d d*, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK LE BEAU.

Witnesses:

J. R. DRAKE,
HENRY HEITMUELLER.