(No Model.) 2 Sheets—Sheet 1.

W. S. & Z. M. COLLINS.

WATER MOTOR.

No. 436,595. Patented Sept. 16, 1890.

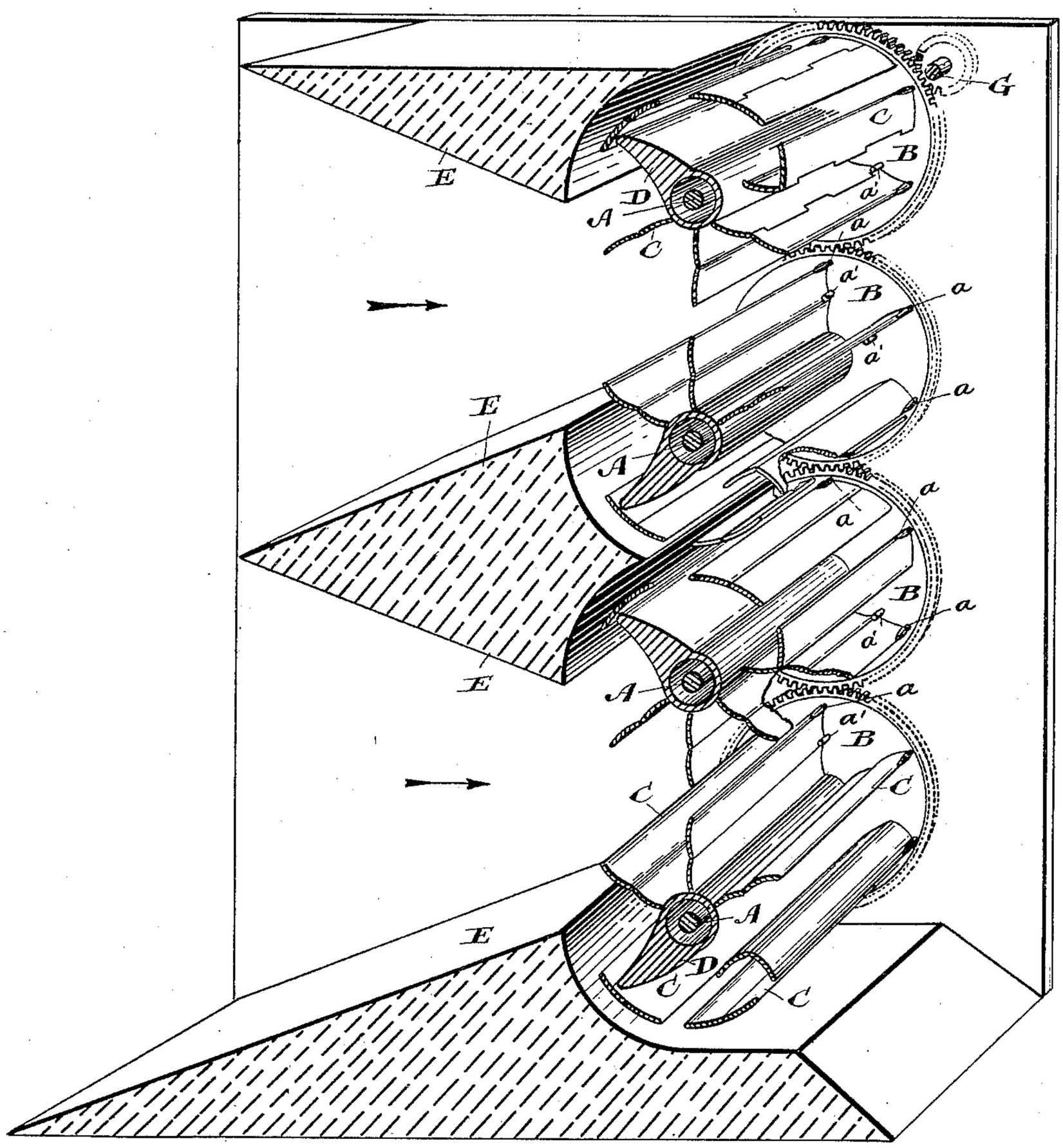

Fig. 1.

Witnesses.

F. B. Fesmonkaugh.

F. R. Cameron.

Inventors.

Wm S. Collins

Zerobable M. Collins

by Donald C. Ridout & Bro.

Attys

(No Model.) 2 Sheets—Sheet 2.

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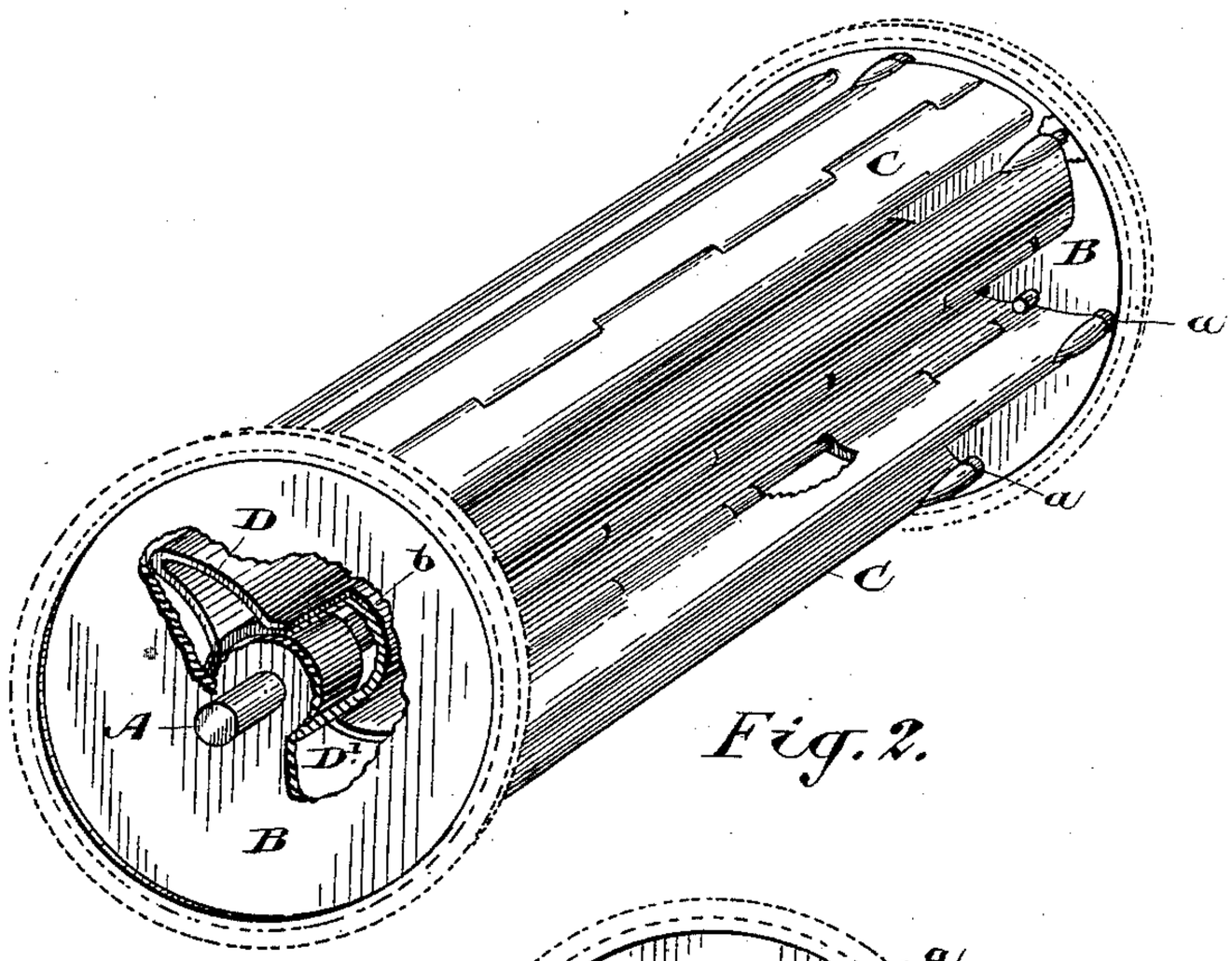

Fig. 2.

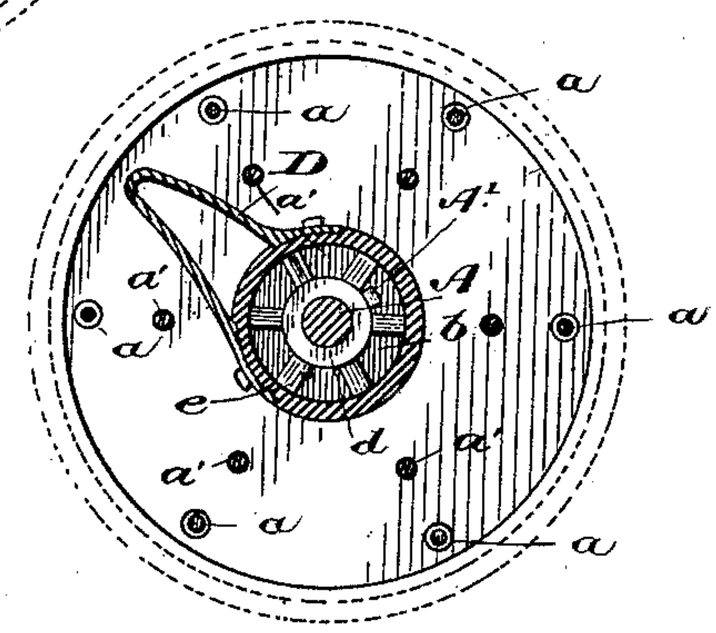

Fig. 3.

Witnesses.
F. B. Fethuston Haugh.
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UNITED STATES PATENT OFFICE.

WILLIAM SEXTON COLLINS AND ZOROBABLE MATHEW COLLINS, OF TORONTO, CANADA.

WATER-MOTOR.

SPECIFICATION forming part of Letters Patent No. 436,595, dated September 16, 1890.

Application filed October 9, 1889. Serial No. 326,452. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM SEXTON COLLINS, clerk, and ZOROBABLE MATHEW COLLINS, pressman, both of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have jointly invented a certain new and Improved Water-Motor, of which the following is a specification.

The object of our invention is to design a water-motor specially adapted to operate in rivers or streams; and it consists, essentially, of two or more disks revolubly supported upon a stationary axle and having a series of hinged floats pivoted on them in such a manner that as the disks revolve the hinged floats fold up to pass a shelf or arm projecting from the stationary axle in such a manner as to form a cut-off, so that the pressure of the water shall be directed on one side only of the floats, the whole being arranged in detail substantially as hereinafter more particularly explained.

Figure 1 is a perspective view of our improved motor, showing four pairs of disks geared together, the driving-floats of one pair of disks being set to revolve in the opposite direction to that in which the adjacent disks revolve. Figs. 2 and 3 are details showing the construction of the blades, disks, and shelf or partition D.

A represents a stationary shaft, on each end of which is journaled a disk B. Between these disks we pivot in the bushes *a* on each disk a series of hinged floats C.

D is a shelf or partition fixed to the cylinder D′, which is secured to the stationary shaft A by bolts A′ passing through the hub *d*, to which the cylinder D′ is connected by the arms *e*. The shelf D extends to a point near the casing, which partially surrounds the circumference of the disk B and the sweep of the blades C. The hubs *b* of the disks B project into and revolve within the cylinder D′.

E is a slanting chute which extends above or below the center of the shaft A, so as to direct the stream of water above or below the said center, according to the direction in which it is desired to cause the disks to revolve.

In the drawings we show a motor to secure the full benefit of the stream—that is to say, we show a number of disks arranged one on top of the other, geared together and set so that the water passing through them will cause them to revolve, so that they will all assist one another and contribute their combined force to produce the power desired.

The motor is so set in the stream that the chutes E shall point up the stream. Consequently the water will enter as indicated by the arrows, and coming in contact with the hinged floats C will straighten them out and bring them in contact with the stops *a*, thus causing the disks to revolve.

Owing to the shape and position of the chute E and the location of the shelf or partition D, the pressure of the water is directed on one side of the shaft A, causing the disks B to revolve, and as all these disks B are geared together, the combined force directed against all the disks so geared together is secured as driving-power for the shaft G, which is geared, as indicated, to the upper disk. This shaft G may be arranged in any suitable manner to convey power to any desired location. As the disks revolve, each float as it passes the shelf or partition D folds back, so as to clear the end of the shelf, as indicated, and the instant that it passes the said shelf the pressure of the water entering the chute forces the float out straight in a position to resist the water-pressure and thus secure the desired power.

What we claim as our invention is—

1. The combination, in a rotary motor, of a fixed shaft, a partition D fastened thereto, disks B B, revolving on the shaft, and a series of floats hinged to the disks near their peripheries, each swinging inward against a stop, substantially as described.

2. The combination, with a series of disks B, geared together and journaled on their respective shafts A, from which shelves or partitions D project, each pair of the said disks having a series of hinged floats arranged between them, substantially as and for the purpose specified.

Toronto, August 29, 1889.

WILLIAM SEXTON COLLINS.
ZOROBABLE MATHEW COLLINS.

In presence of—
CHARLES C. BALDWIN,
FRANK R. CAMERON.