

(No Model.)

2 Sheets—Sheet 1.

W. T. CHRISTY.

WATER MOTOR.

No. 319,391.

Patented June 2, 1885.

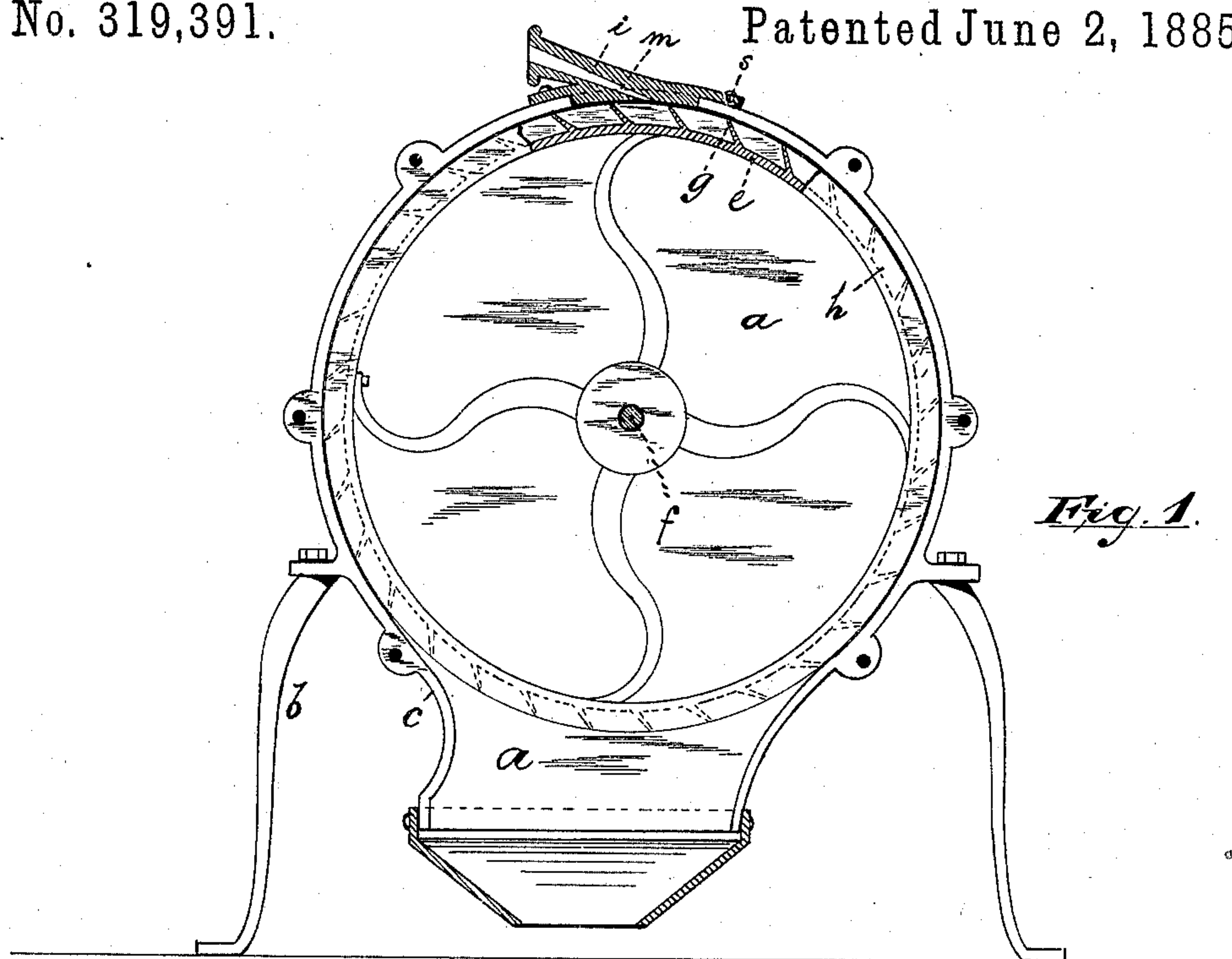


Fig. 1.

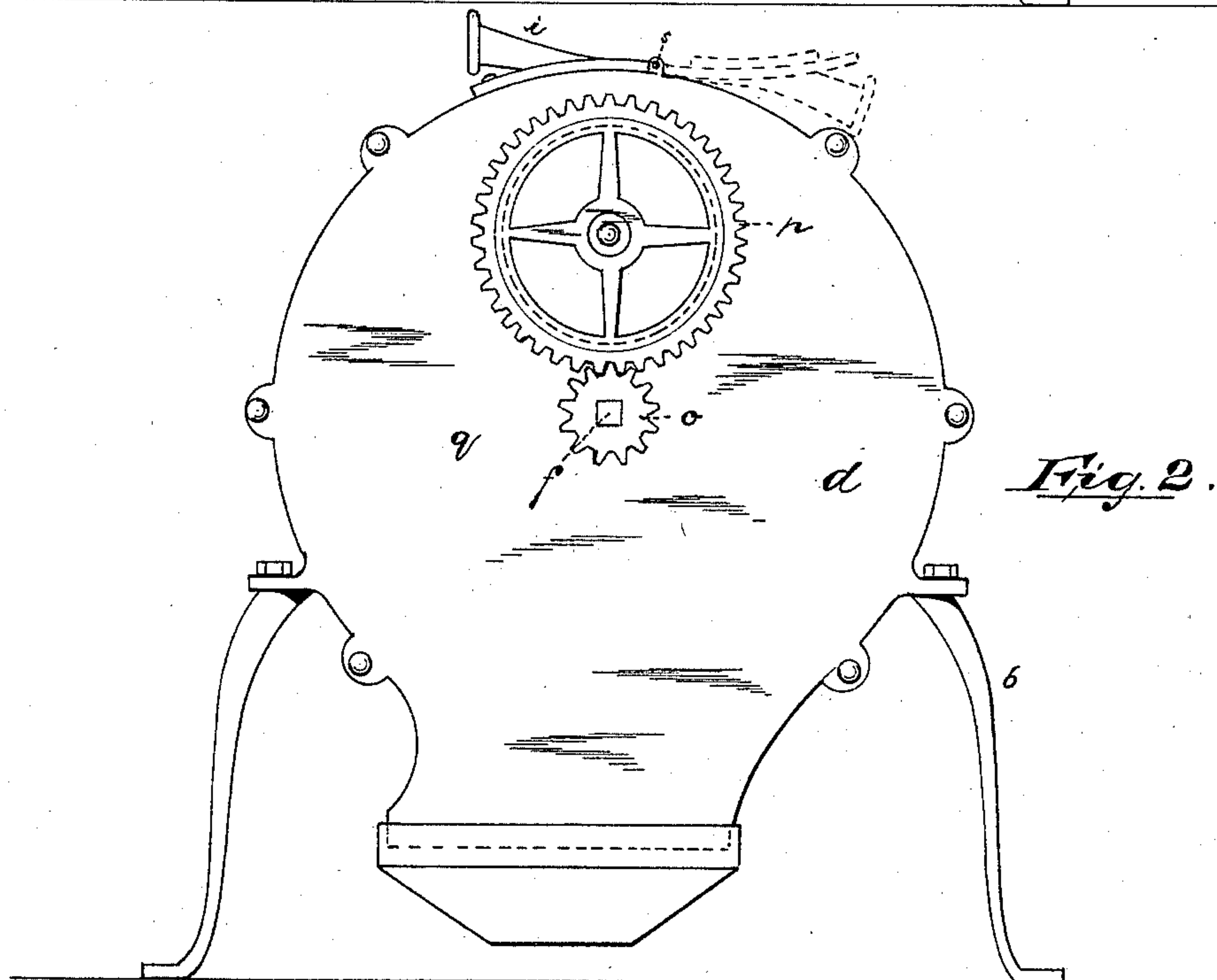


Fig. 2.

Attest:

Inventor:

Frederick F. Campbell.

Ernest D. Winans.

William T. Christy
by Drake & Co.
attys.

(No Model.)

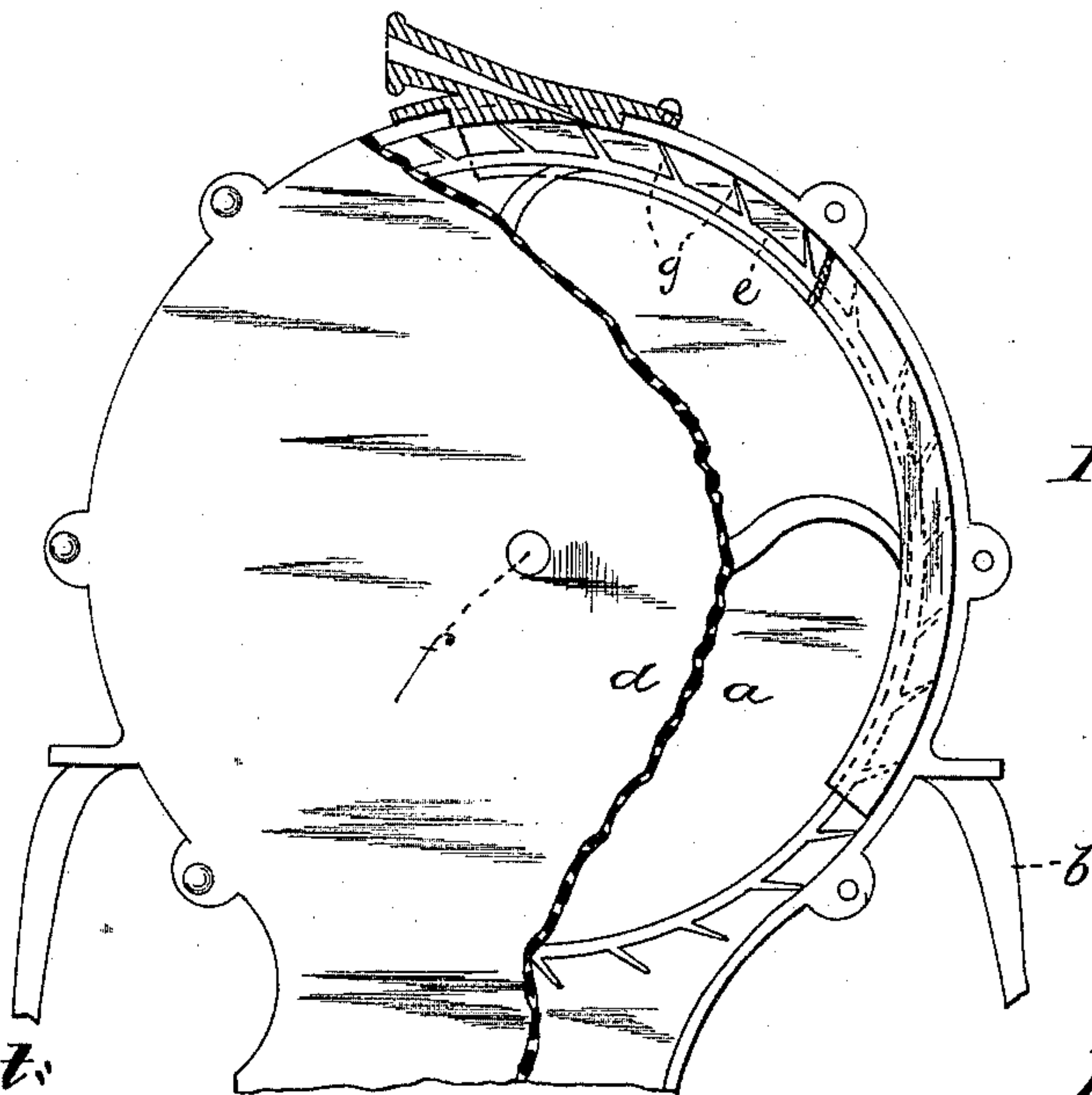
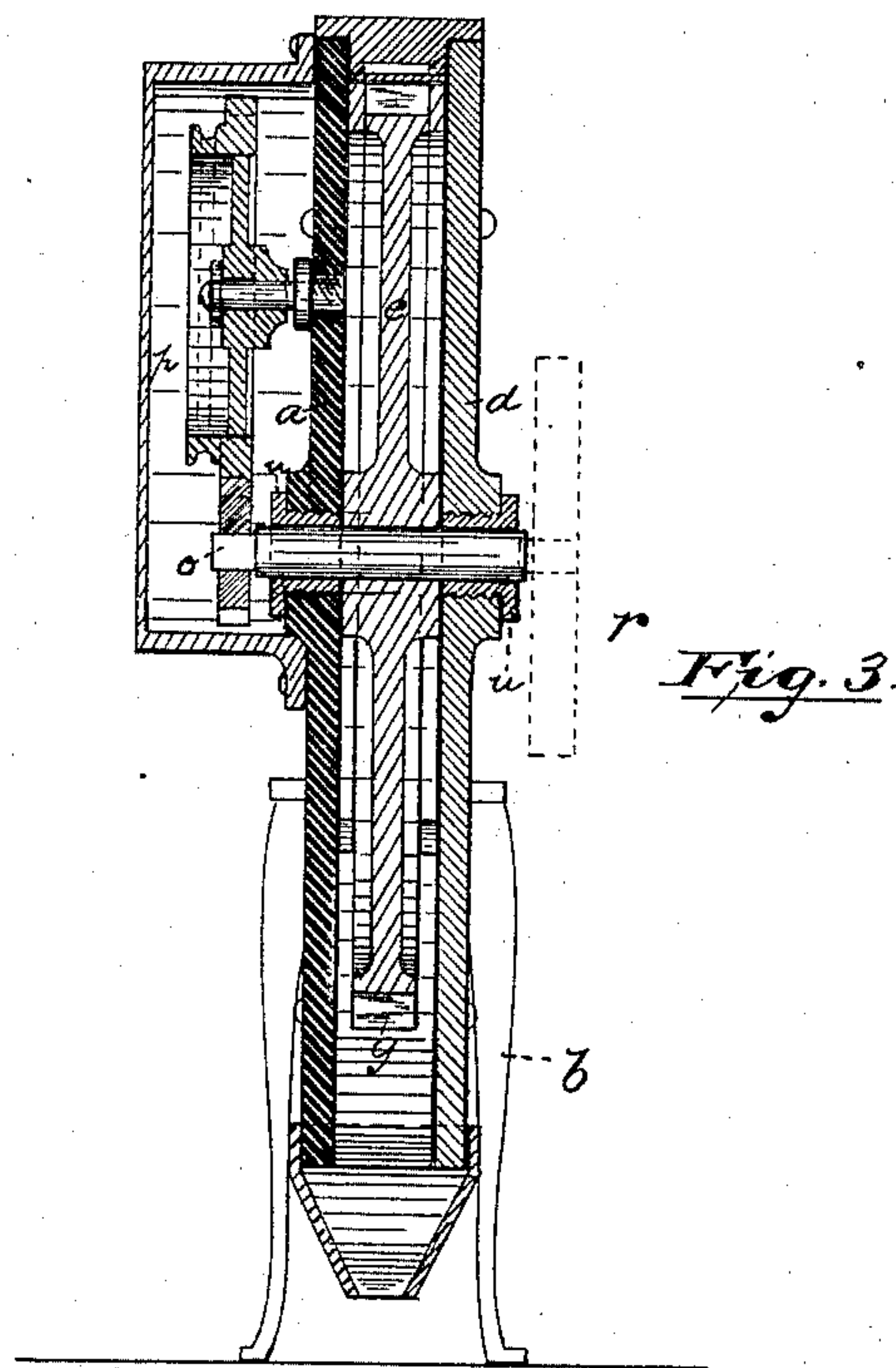
2 Sheets—Sheet 2.

W. T. CHRISTY.

WATER MOTOR.

No. 319,391.

Patented June 2, 1885.



Attest:

Inventor:

Frank F. Campbell.
Ernest D. Winans

William T. Christy,
by Drake & Co.,
attys.

UNITED STATES PATENT OFFICE.

WILLIAM T. CHRISTY, OF NEWARK, NEW JERSEY.

WATER-MOTOR.

SPECIFICATION forming part of Letters Patent No. 319,391, dated June 2, 1885.

Application filed July 31, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. CHRISTY, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Water-Motors; and I do hereby 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to utilize to a greater degree the motive force derived from running water, to reduce the cost of constructing water-motors, to facilitate the operation of cleaning or removing obstructions from said motors, and to otherwise improve said devices.

The invention consists in the arrangements and combinations of parts, substantially as will be hereinafter set forth, and finally embodied in the clauses of the claim.

Referring to the accompanying two sheets of drawings, in which similar letters of reference indicate corresponding parts in each of the figures, Figure 1, Sheet 1, is a side elevation, partially in section, of a water-motor, the side plate being removed to show the wheel therein. Fig. 2 is a side elevation of the device, showing certain gear-wheels thereon, through which power is transmitted to the pulley-wheel. Fig. 3, Sheet 2, is a vertical cross-section taken through the center of Fig. 2; and Fig. 4 is a side view showing certain preferred constructions.

In said drawings, *a* is a case or plate provided with legs *b b* and a peripheral flange or rim, *c*, which, together with a side plate, *d*, forms a chamber for the water-wheel *e*, which revolves on and with a shaft, *f*, and is provided with inclined wings *g*, forming buckets, into which the water is forced.

To reduce the weight of the wheel, so that the same will be more actively influenced by the water, I form the sides of the buckets open; and upon the plates *a d*, laterally ad-

jacent to said buckets, I arrange curved segmental plates *h h*, which extend from the inlet jet or nozzle to a water-exit at the bottom of the wheel-chamber. The sides of the wheel fit closely between the said plates, but not so as to clamp the said wheel or obstruct the motion thereof. The said plates are short as compared with the wheel-periphery, so that little friction is occasioned between them and said wheel.

The nozzle *i*, through which the water is received from the supply-pipe, is a hinged casting movably secured to the flange *c*, and adapted to be turned or reversed in position, as indicated in outline in Fig. 2, to enable the same to be readily cleansed or cleared of obstructing matter, and returned to its proper position with respect to the wheel with facility. The inlet-opening *m* therein is made flat and approximately of the width of the wheel, as shown in Fig. 3, so that the water flowing through said inlet will have a broad contact extending entirely across the wheel, whereby increased power is attained. The inlet-opening is contracted from where it receives the water from the supply-pipe toward its exit, so that the water is forced through its said exit with increased velocity.

The wheel shaft or journal projects beyond the side plates, and to it is attached the pinion *o*, which engages the cogged belt-pulley *p*, having its bearings on a shaft projecting from the side of said plate. The opposite end of said shaft may be provided with a belt-pulley, *r*, by which power is transmitted directly from the water-wheel to the belt. The gear-wheels *o* and *p*, are preferably inclosed by a cap or guard, *q* which protects said wheels from dust, and the clothes from being caught therein.

Having thus described my invention, what I claim as new is—

1. In a water-motor, the plates *a* and *d*, the water-wheel therebetween, and a hinged nozzle, *m*, said parts being arranged and operating substantially as and for the purposes set forth.

2. The combination of the plates *a d*, water-wheel *e*, a nozzle, and segmental portions

engaging the sides of the wheel to form buckets with the wings *g* thereof, and extending but partly around the periphery of said wheel approximately from the inlet-opening to the
5 water-exit, said parts being arranged and operating substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 22d day of July, 1884.

WILLIAM T. CHRISTY.

Witnesses:

OLIVER DRAKE,
CHARLES H. PELL.