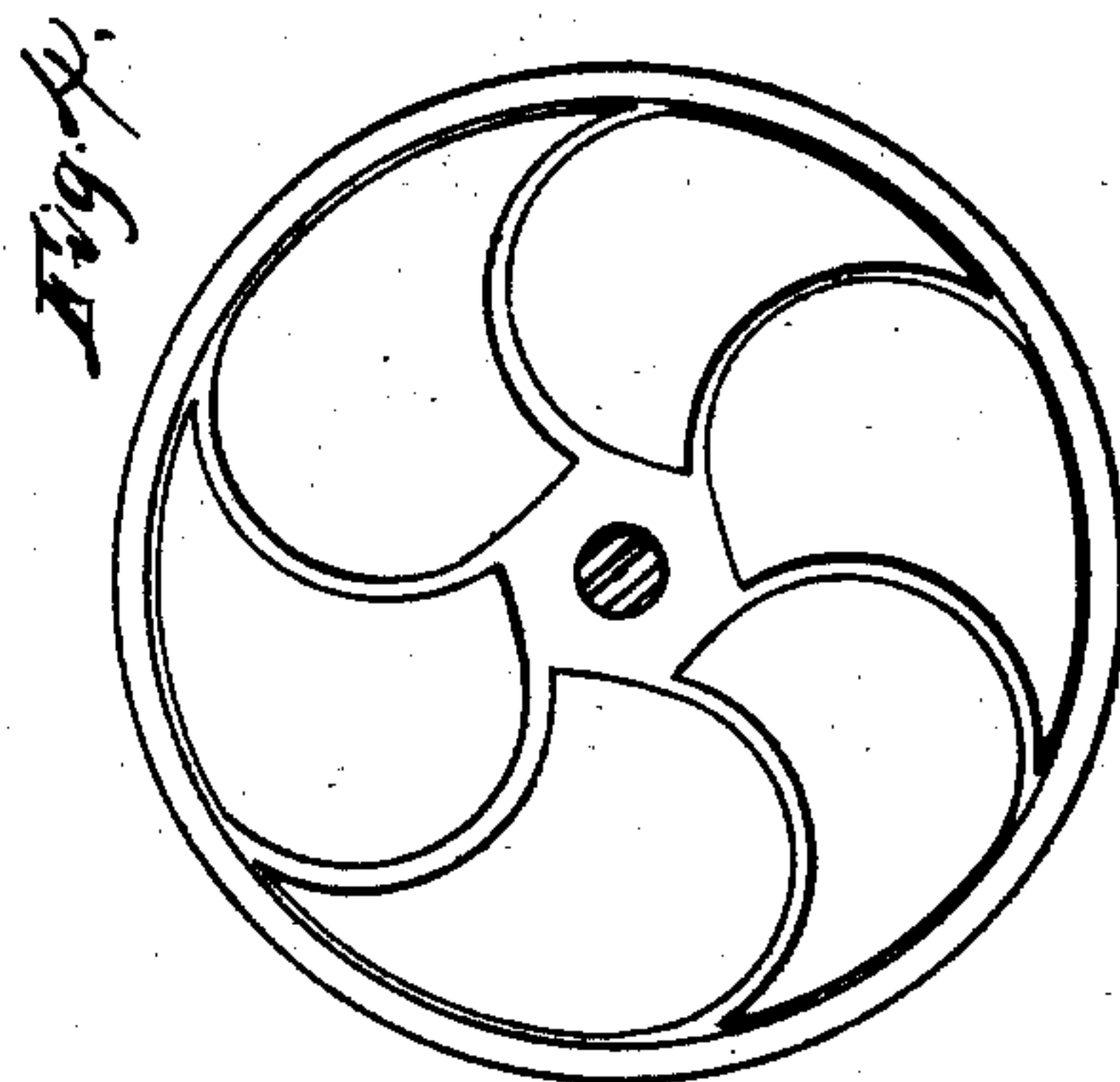
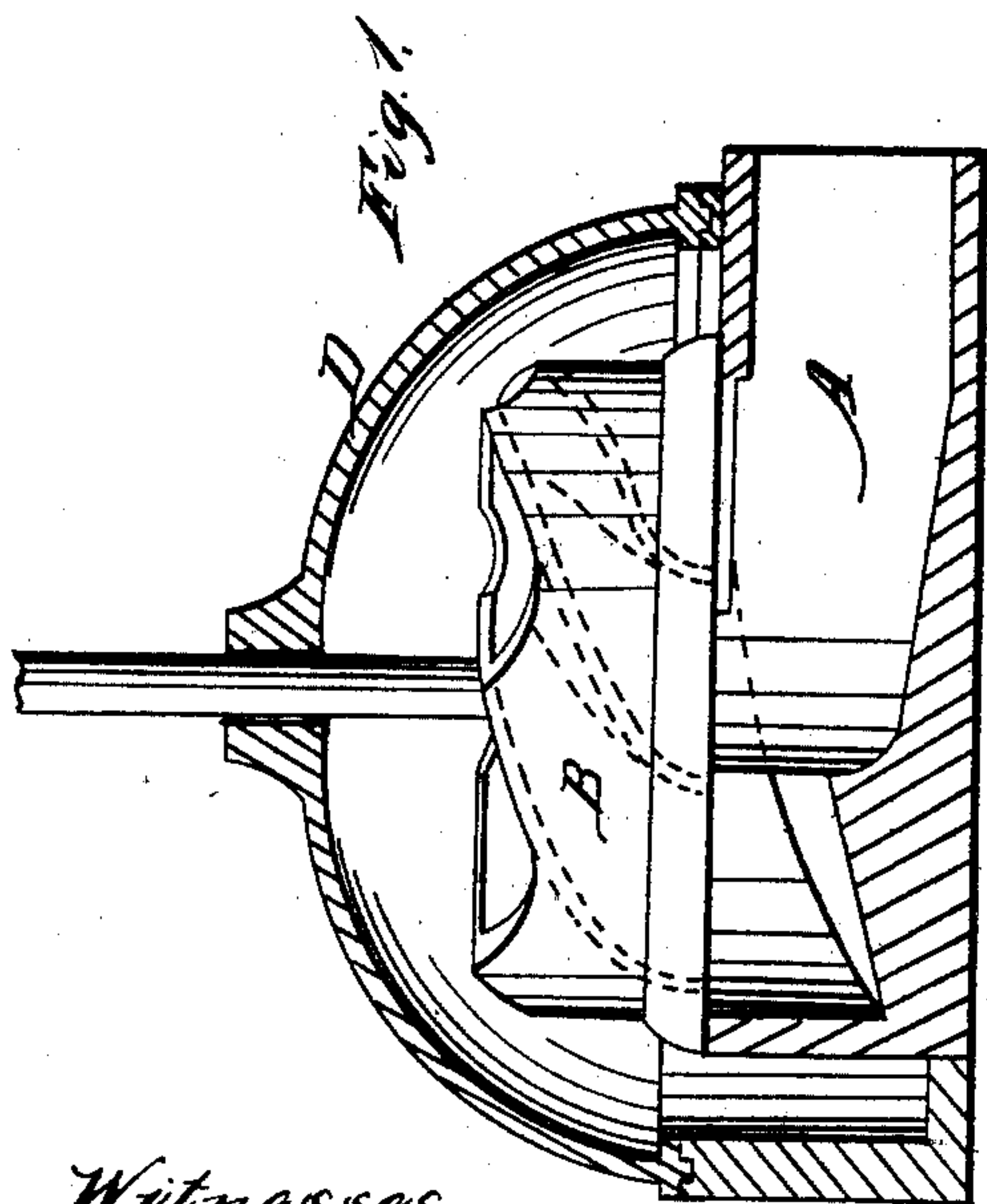
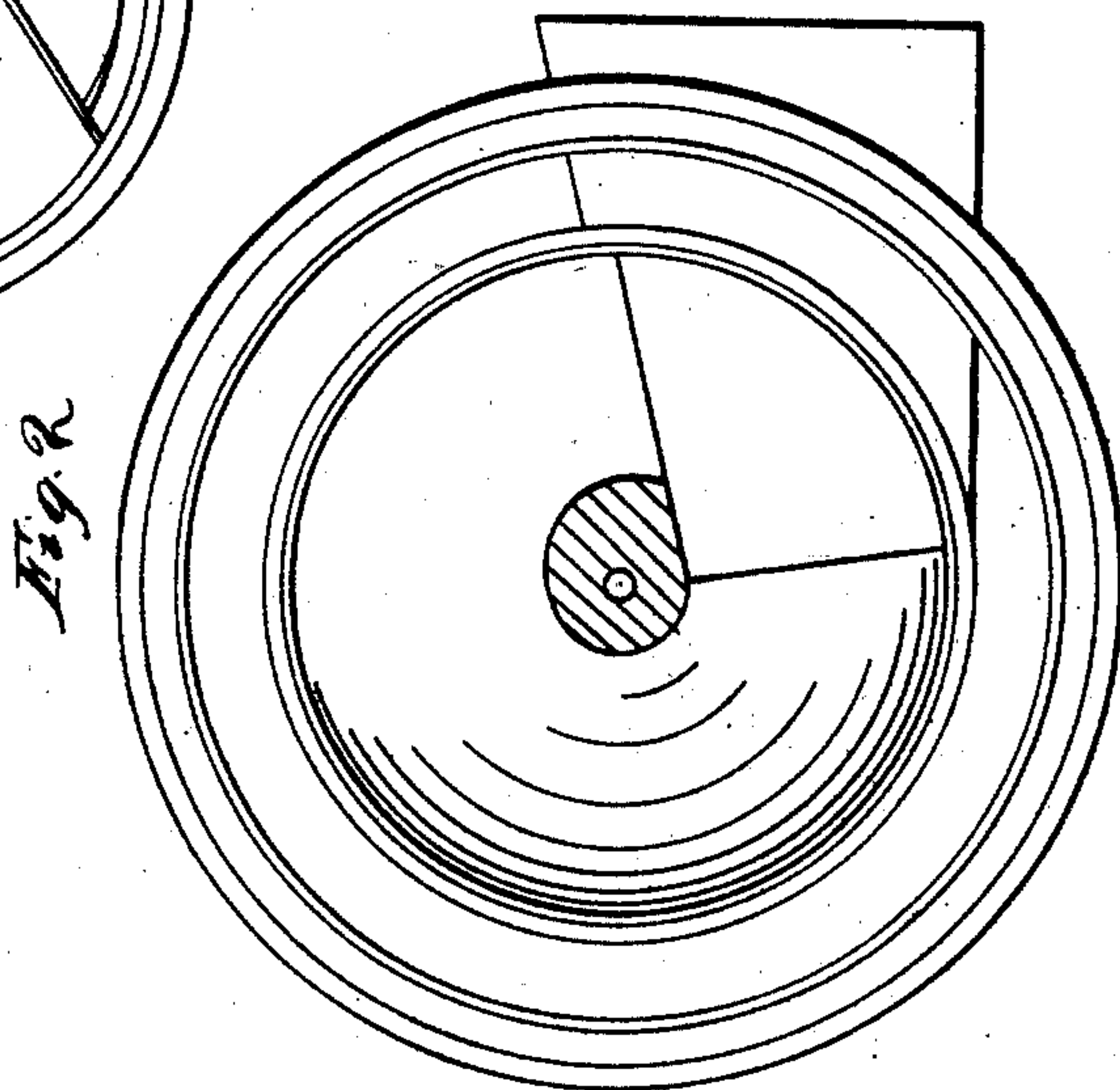
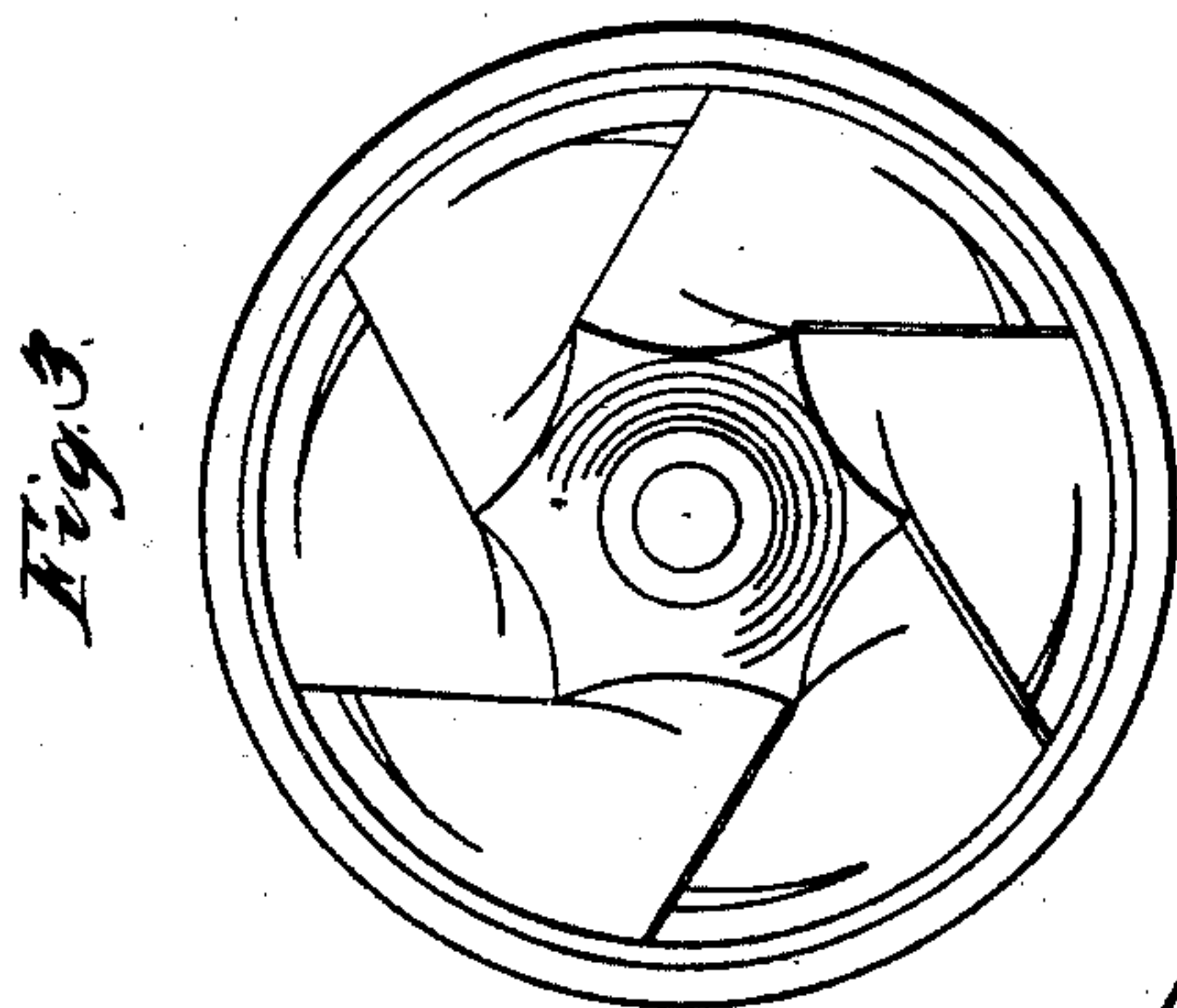


Haag & Smith,

Water Wheel,

No. 34,832.

Patented Apr. 1, 1862.



Witnesses
to C. M. Alexander
A. A. Yeatman

Inventor
J. Haag
J. C. Smith

UNITED STATES PATENT OFFICE.

JOEL HAAG AND I. C. SMITH, OF BERNVILLE, PENNSYLVANIA.

IMPROVED WATER-WHEEL.

Specification forming part of Letters Patent No. 34,832, dated April 1, 1862.

To all whom it may concern:

Be it known that we, JOEL HAAG and I. C. SMITH, of Bernville, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Water-Wheels; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

In the annexed drawing, making part of this specification, A is a spiral water-way, so constructed as to receive a large inlet or opening leading from the reservoir in gradually-diminishing width to the wheel, which is placed upon and concentrically with the spiral water-way, whereby the greatest possible quantity of water is made to act upon the wheel and still retain a spiral motion.

B represents the wheel, the shaft of which is stepped at the center of the spiral water-way. The buckets of this wheel are of concave spiral form, gradually diminishing in width from their lower to their upper ends, and having semicircular-formed bottoms and flat tops.

C is a cylinder which encompasses the spiral water-way and extends down as low as or a little lower than the lower end of the spiral water-way. The cylinder is larger than the spiral water-way, so that a space is allowed between them.

D is a dome-shaped cap which covers the wheel. A space is allowed between the wheel and the cap, which coincides with the space between the cylinder and the spiral water-

way. The shaft passes up through the center of the cap or top, and the power is taken from the upper part of the shaft.

The water passes into the spiral water-way, acts upon the buckets of the wheel, and, issuing at the top of the wheel, passes down the space between the cylinder and spiral water-way, the latter space forming a draft-tube and admitting of a free escape of the water into the tail-race.

We are aware of the patent of Andrews and Kalbach of August 30, 1859, and we disclaim everything claimed and represented by them.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The employment of the spiral water-way contracting in two directions as it approaches the wheel, as and for the purpose set forth.

2. The use of the buckets being of a concave spiral form gradually diminishing in width from their lower to their upper ends and having semicircular-formed bottoms and flat tops, so formed that the water is easily and quickly discharged, as and for the purpose specified.

In witness that we claim the foregoing we have hereunto set our hands in the presence of two witnesses.

JOEL HAAG.
I. C. SMITH.

Witnesses:

JOHN KLINE,
SAMUEL M. KLEE.