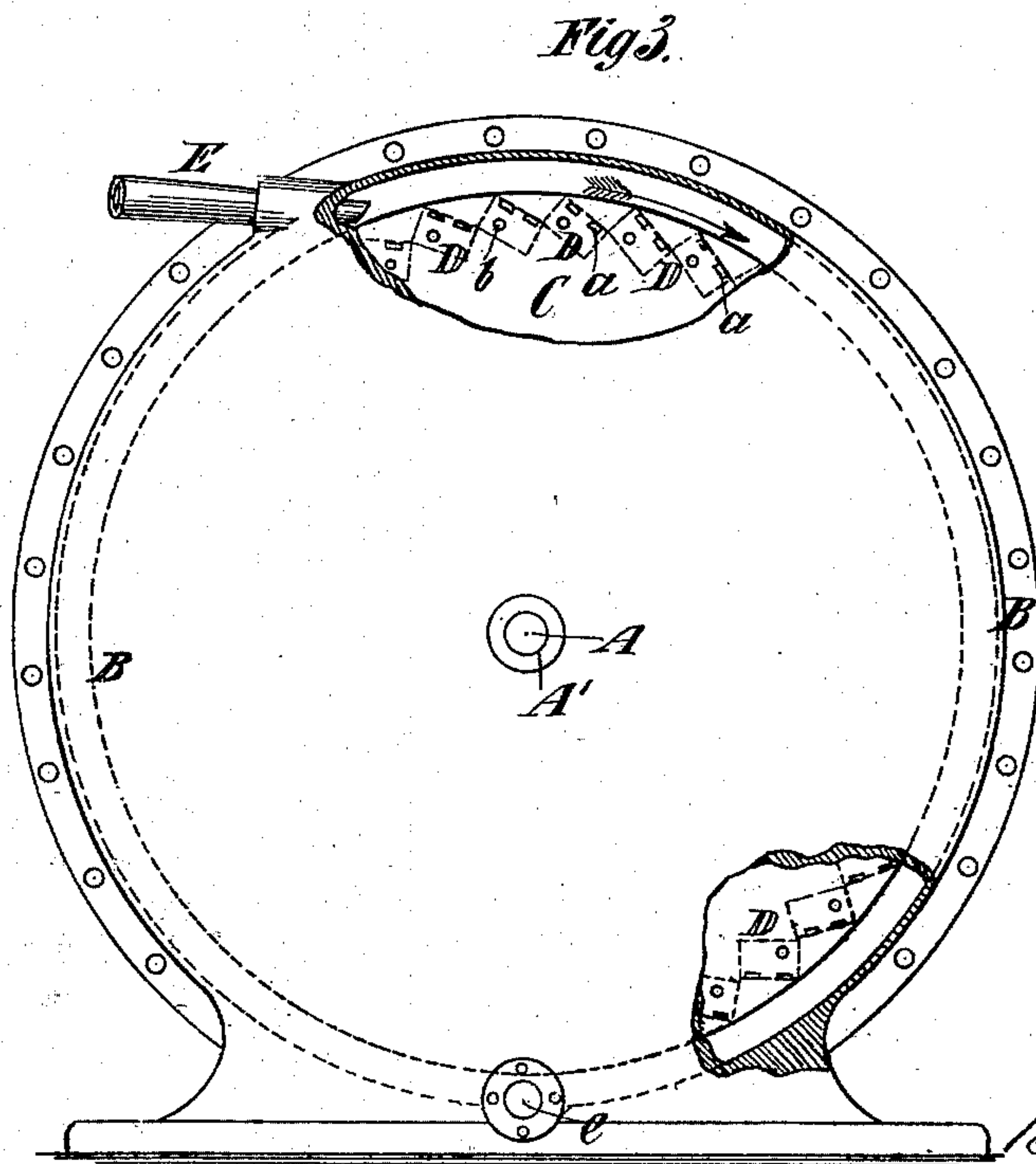
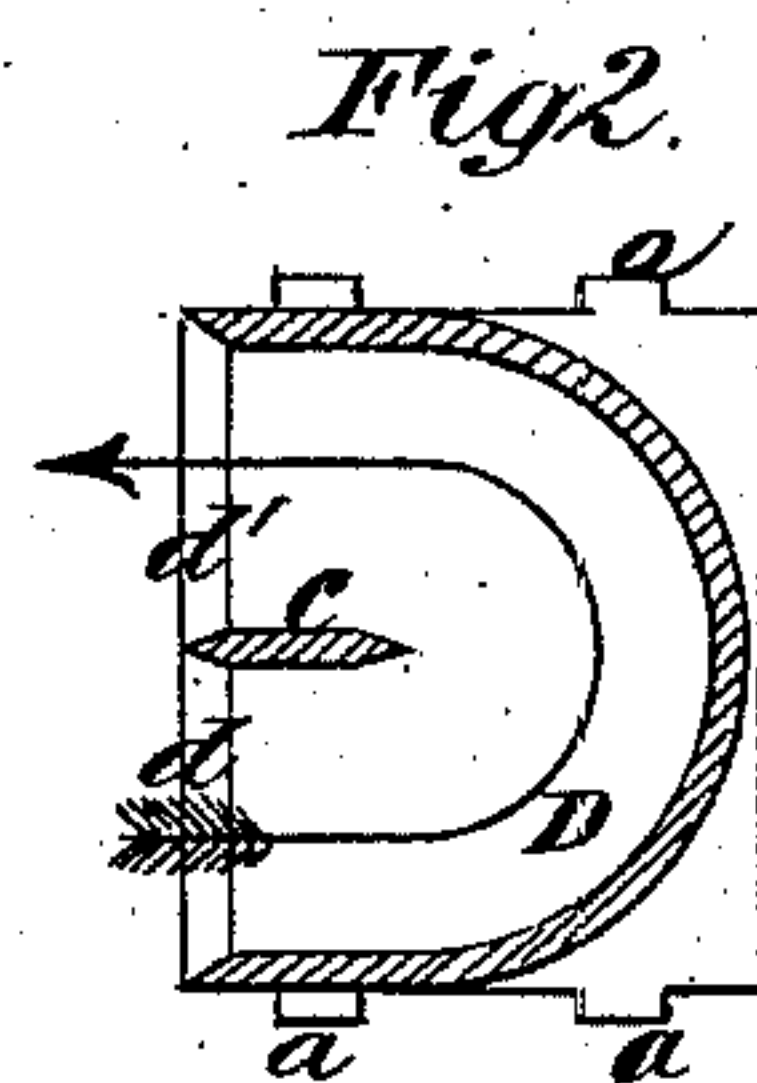
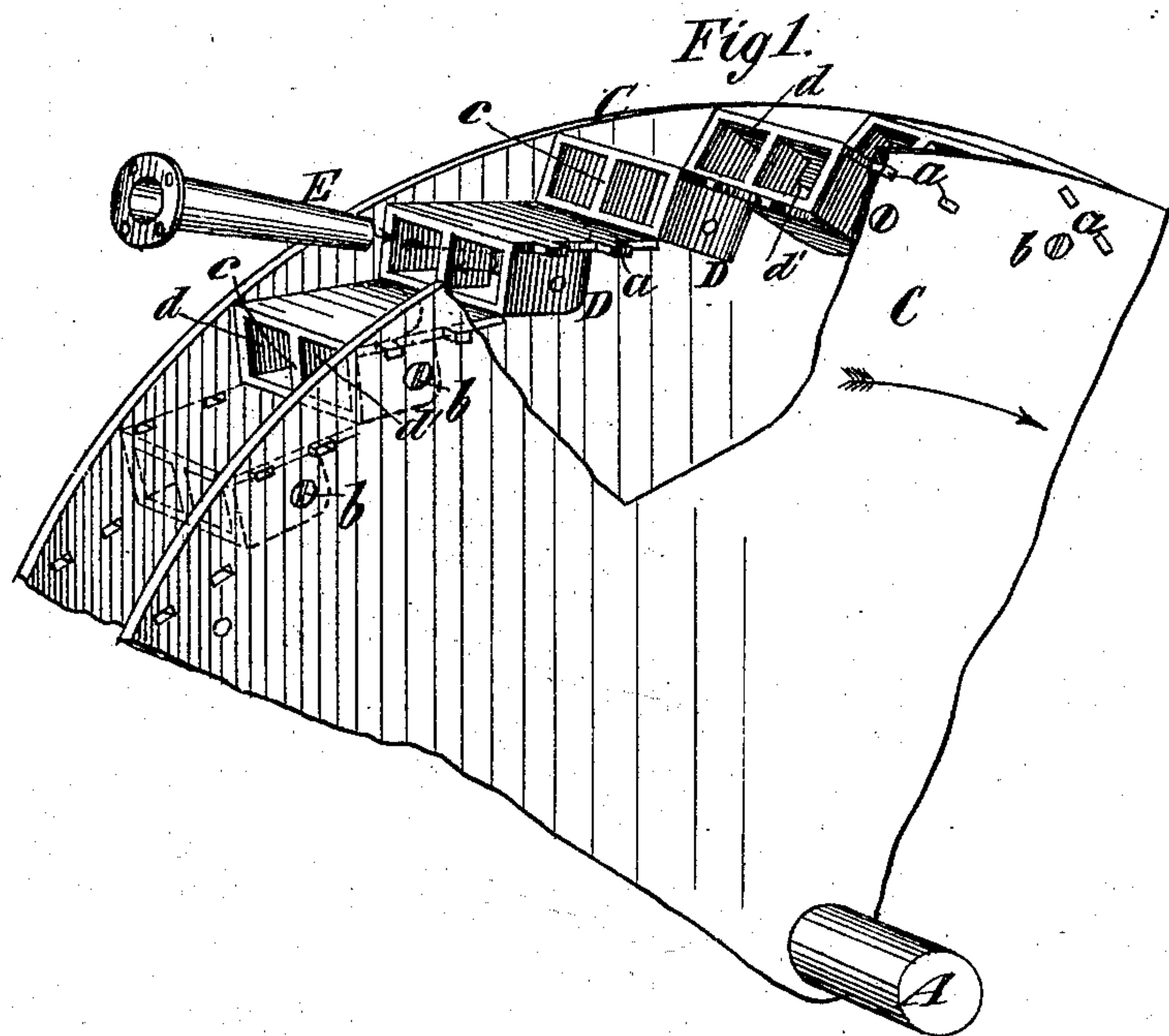


(No Model.)

B. T. BABBITT.
ROTARY ENGINE.

No. 269,991.

Patented Jan. 2, 1883.



Witnesses
Fred Wagner
Ed L. Moran

Inventor
B. T. Babbitt
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UNITED STATES PATENT OFFICE.

BENJAMIN T. BABBITT, OF NEW YORK, N. Y.

ROTARY ENGINE.

SPECIFICATION forming part of Letters Patent No. 269,991, dated January 2, 1883.

Application filed July 28, 1882. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN T. BABBITT, of the city and county of New York, in the State of New York, have invented a certain new and useful Improvement in Rotary Engines, of which the following is a specification.

The object of my invention is to provide a very simple rotary engine in which there are no closely-working surfaces, which are liable to great wear, and which, by reason of such wear, frequently render the engine useless.

My invention consists in the combination, with a rotary shaft and a wheel or flanges thereon, of a circular series of buckets or pockets attached to the wheel or flanges and each provided with two mouths or orifices opening in the same direction, and a stationary nozzle from which a jet of steam may issue continuously into one mouth or orifice of the several buckets in succession and impel the wheel by its impact against the back or bottom of the bucket, while the steam escapes from the other mouths or orifices of the buckets, and, by reacting upon the closed backs or bottoms of the buckets, again acts to impel the wheel. I also combine with the above a stationary jacket or case which incloses the wheel and retains the exhaust-steam; and at the bottom of this jacket is an escape-pipe through which the exhaust and the water of condensation may escape.

In the accompanying drawings, Figure 1 represents a perspective view of a portion of the wheel with its buckets and the steam-nozzle. Fig. 2 represents a detail sectional view of one of the buckets, and Fig. 3 represents a partly-sectional side view of the engine on a smaller scale.

Similar letters of reference designate corresponding parts in all the figures.

A designates a shaft which passes through bearings A' in a stationary cylinder casing or jacket, B, wherein it is adapted to turn, and C C designate flanges which are secured at a little distance apart on said shaft, and form, in effect, a wheel.

D designates buckets or pockets, of which there may be any desired number, arranged in a circular series between the flanges or in the wheel, and E designates a stationary nozzle, to which a steam-pipe may be connected,

and which extends through the jacket or case in such position that the buckets D pass in close proximity to the end of the nozzle. The buckets here shown are U-shaped, as best shown in Fig. 2, and they may be composed of sheet metal, or in any other suitable manner. In this example of my invention the outer sides or walls of the buckets have ears or lugs *a* projecting from their sides, which pass through holes in the flanges C, and may have their ends riveted to secure the flanges together. Screws *b* may be inserted through the flanges and into the buckets, and serve additionally to secure the buckets in place. Each bucket D is divided by a partition, *c*, about midway of its width, so as to form in each bucket two separate mouths or orifices, *d d'*, side by side, and facing or opening in the same direction. The steam issuing from the nozzle E enters the mouths or orifices *d*, and, impinging against the closed backs or bottoms of the buckets, impels the wheel and shaft in the direction of the arrow in Figs. 1 and 3. As the wheel is turned the steam enters the buckets successively and rotates the wheel at a uniform speed throughout its entire rotation. The steam escapes from the buckets through the mouths or orifices *d'*, and, reacting upon the closed backs or bottoms of the buckets, serves additionally to turn the wheel.

The shaft A may have a pulley fixed upon it outside the jacket or casing B, from which power may be taken by a belt. The jacket or casing E serves to retain the exhaust-steam and prevents its escape into the atmosphere, and is sufficiently larger in diameter than the wheel to afford a clear space around it. The steam and water of condensation escape from the jacket or casing through an escape-pipe, *e*.

This engine is very simple in its construction. There are no parts which are liable to get out of order, and no surfaces which move in such close contact with other surfaces as to create wear.

My engine might be operated by water or other fluid in lieu of steam.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a rotary shaft and a wheel thereon, of a circular series of buckets attached to the wheel, and each provided with two mouths or orifices facing in the same di-

rection, and a nozzle for directing steam or other fluid successively into the mouths or orifices of the several buckets, substantially as and for the purpose specified.

- 5 2. The combination, with the rotary shaft and the wheel provided with a circular series of buckets, each having two mouths or orifices facing in the same direction, of the inclosing jacket or case provided with an escape-pipe
10 and the induction-nozzle projecting through said jacket or case, substantially as specified.

3. The combination of the shaft A, the flanges C C, the U-shaped buckets D, each provided with the partition c, and the nozzle E, substantially as specified.

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Witnesses:

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