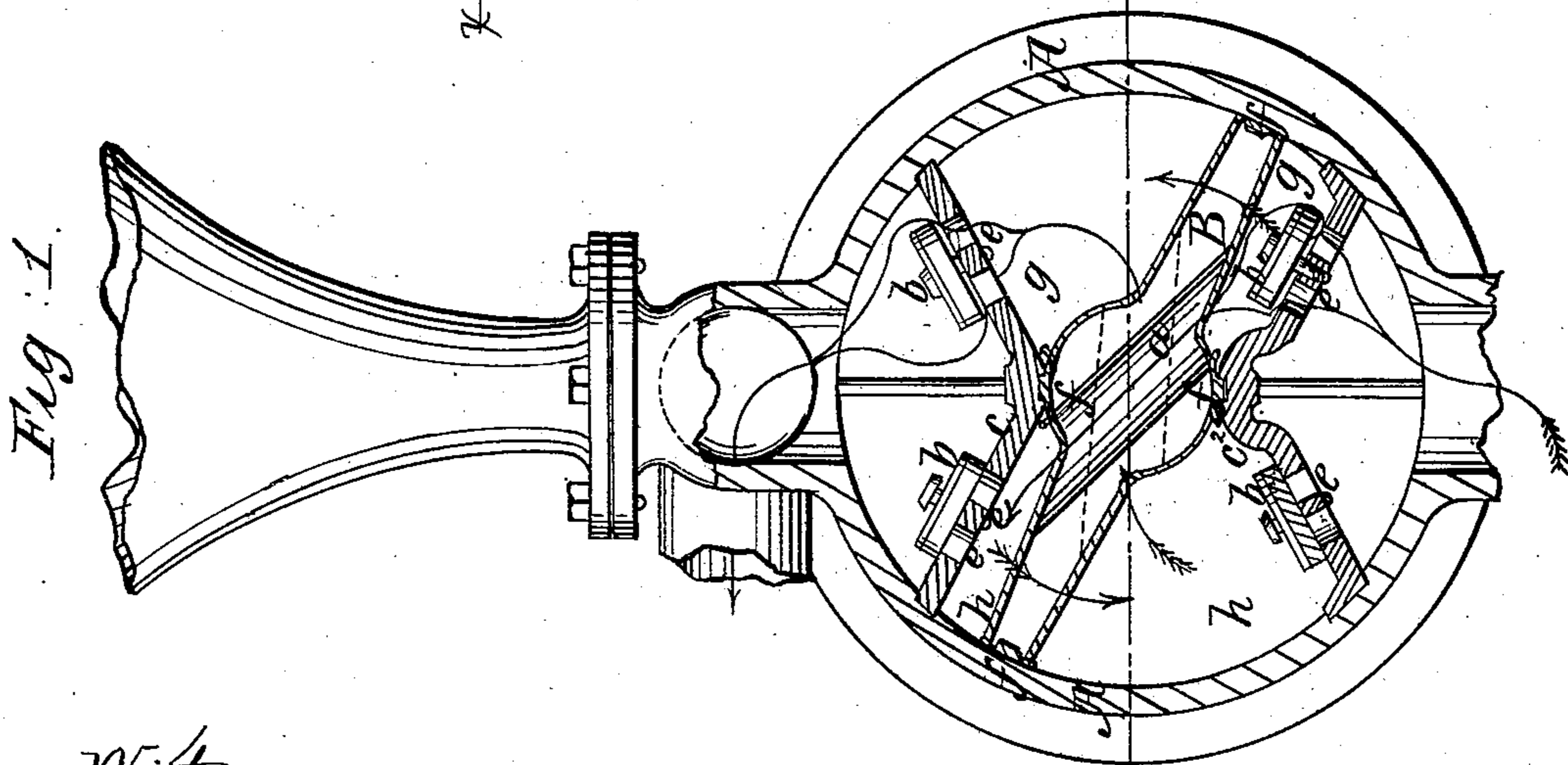
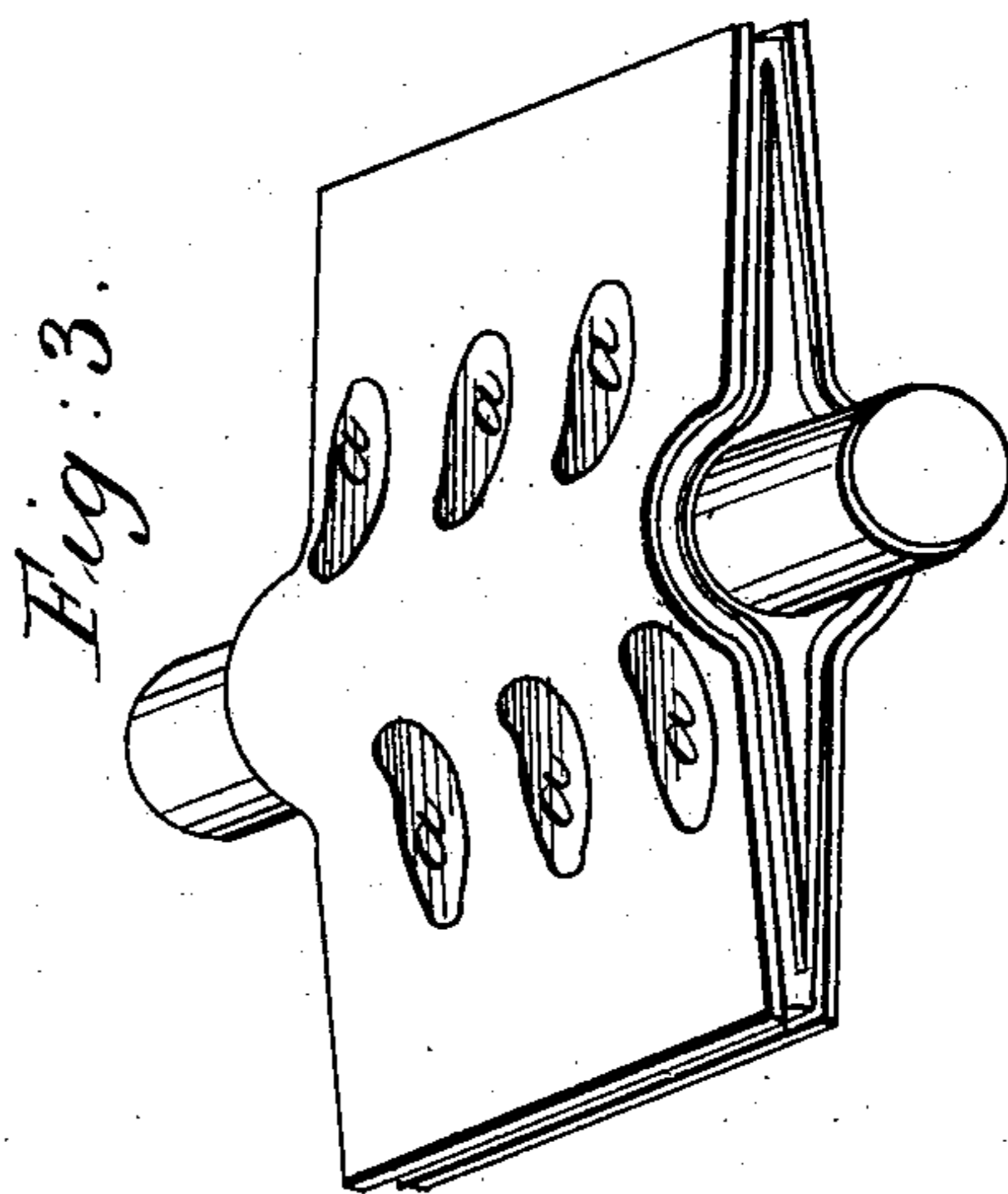
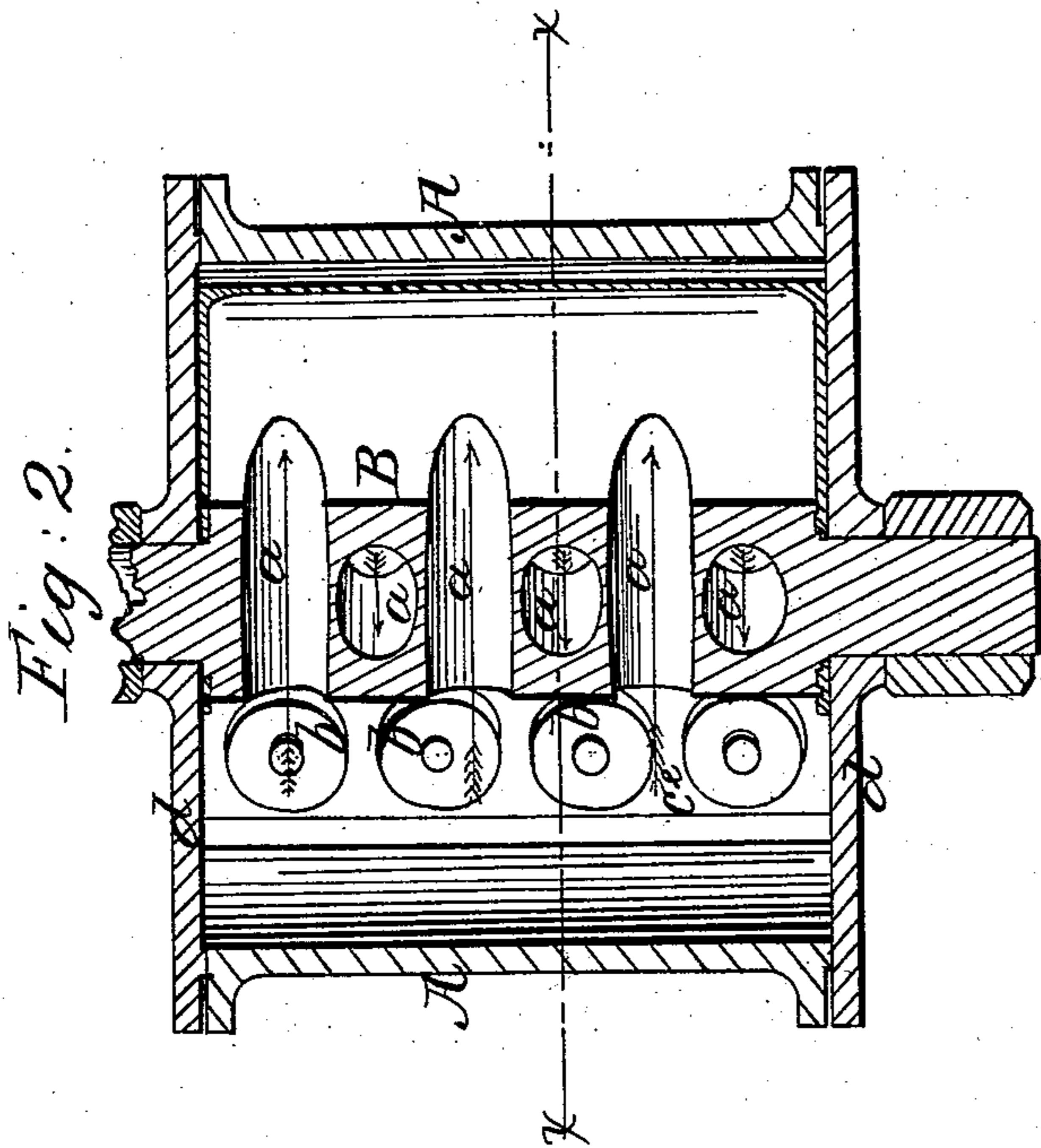


J. E. Hallett,
Oscillating Pump.
N^o 53,373. Patented Mar 20, 1866.



Witnesses:
M. Larcher
Alfred Harley.

Inventor,
James E. Hallett.

UNITED STATES PATENT OFFICE.

JAMES E. HALLETT, OF GREENBUSH, NEW YORK, ASSIGNOR TO EDWARD H. JONES AND CHARLES W. NOYES, OF SAME PLACE.

IMPROVEMENT IN OSCILLATING PUMPS.

Specification forming part of Letters Patent No. 53,373, dated March 20, 1866.

To all whom it may concern:

Be it known that I, JAMES E. HALLETT, of Greenbush, in the county of Rensselaer, in the State of New York, have invented a new and useful Improvement in the Construction of Oscillating Force-Pumps; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 represents a vertical central section of my invention, taken in the line $x x$, Fig. 2. Fig. 2 is a section of the same, taken in the lines $x^2 x^2$ of Fig. 1. Fig. 3 is an isometrical view of the float or plunger B, exhibiting the grooves or gains which are designed to receive the leather or other suitable packing.

The object of this improvement is to dispense with one-half the number of valves necessarily used in a double-acting pump, by the employment of the oscillating float or plunger B, having holes $a a a a$ made diagonally through or radial to the center of said floats B, and at right angles, or nearly so, to the axis of motion, and communicating with the lower right-hand and upper left-hand, or the lower left-hand and upper right-hand chambers. Said holes $a a$ permit the water or other fluid to pass freely through toward the vacuum or outlet valves $b b$.

It will also be observed, by the blue-arrow curves, that the liquid is forced through the holes $a a$, and then kept in check without valves being placed over them, this office being performed by the valves $b b$ placed in the partition c . It will be seen, also, that the water can pass freely through the mechanism of the pump.

The float or plunger B, used in connection with the cylinder A, partition c , and the ordinary slide-valve, would be readily converted into a steam-engine, this being the original design of the inventor.

A, Fig. 1, represents the cylinder of the pump, made of a suitable proportion and truly bored out, and having heads $d d$ bolted thereto, through the centers of which pass the journals of the plunger B, and permitting the same to vibrate or oscillate therein. Partitions $c c^2$ are inserted into the cylinder, as shown, and having valve-openings $e e e e$ formed through them for the admission and discharge of the water. These partitions are provided with leather or other suitable packing $f f$, which overlaps the metal edges and presses on the periphery of the shaft of the float B, in order to prevent the water from escaping from chamber g to chamber h , or vice versa.

It will readily be observed that the opposite chambers, which communicate with each other by means of the holes $a a a a$, are filled and discharged simultaneously.

Having thus described the construction and operation of my invention, what I desire to secure by Letters Patent for the said assignees, is—

1. Providing holes or openings $a a$, arranged diagonally, or nearly so, with each other, and passing through the axis of oscillation of a plunger, B, as shown and described, the said holes communicating with vacuum or receiving chambers $g h$, for the purpose described.

2. In combination with the above, the cylinder A, partitions $c c^2$, and valves $b b'$, the whole operating in the manner and for the purpose substantially as set forth.

3. Fitting the packing $f f$ into grooves, and extending the same or permitting it to overlap the edges of the metal, when used in combination with the plunger B and partitions $c c^2$, as described.

JAMES E. HALLETT.

Witnesses:

I. W. LATCHER,
ALFRED HARLEY.