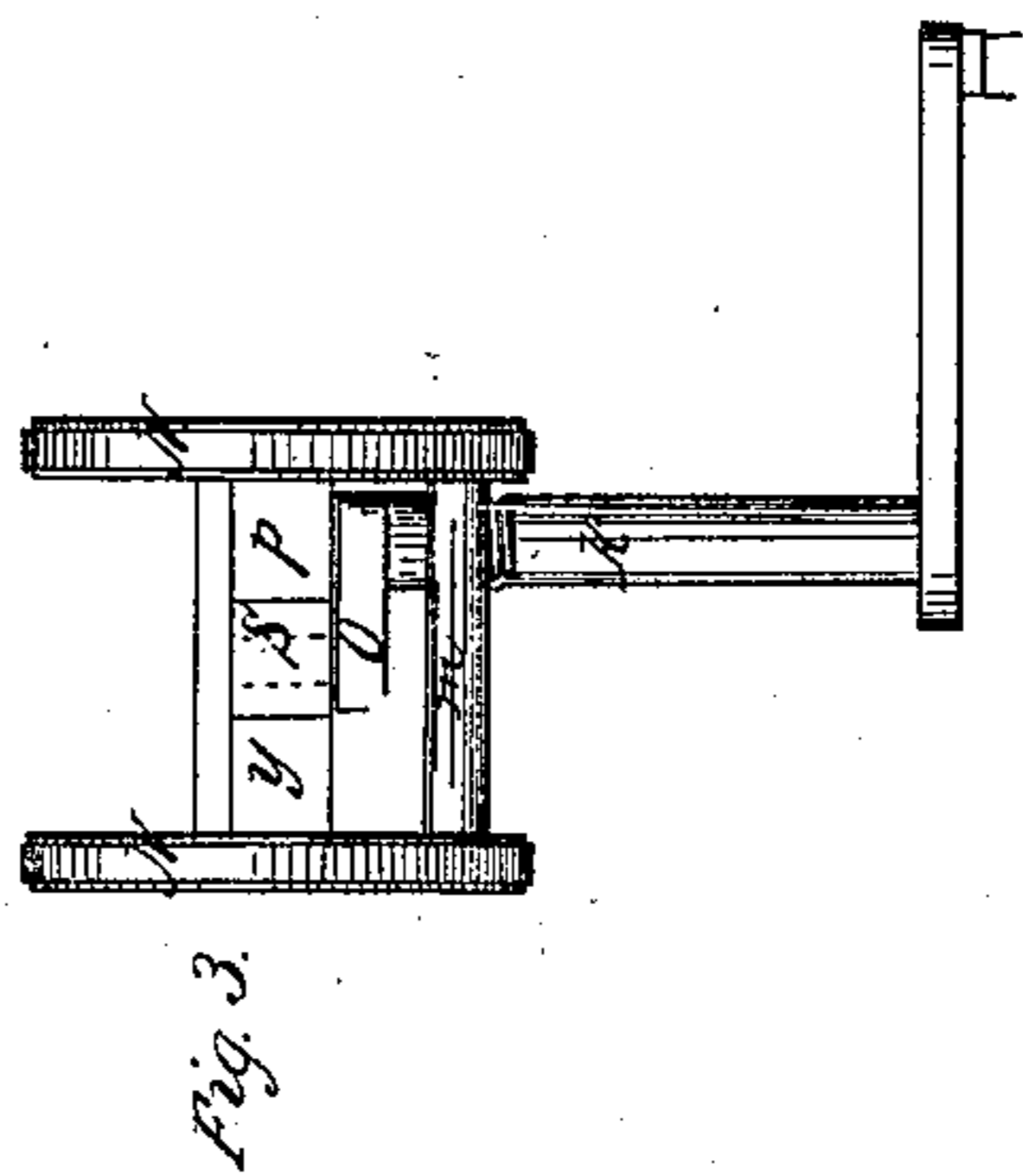
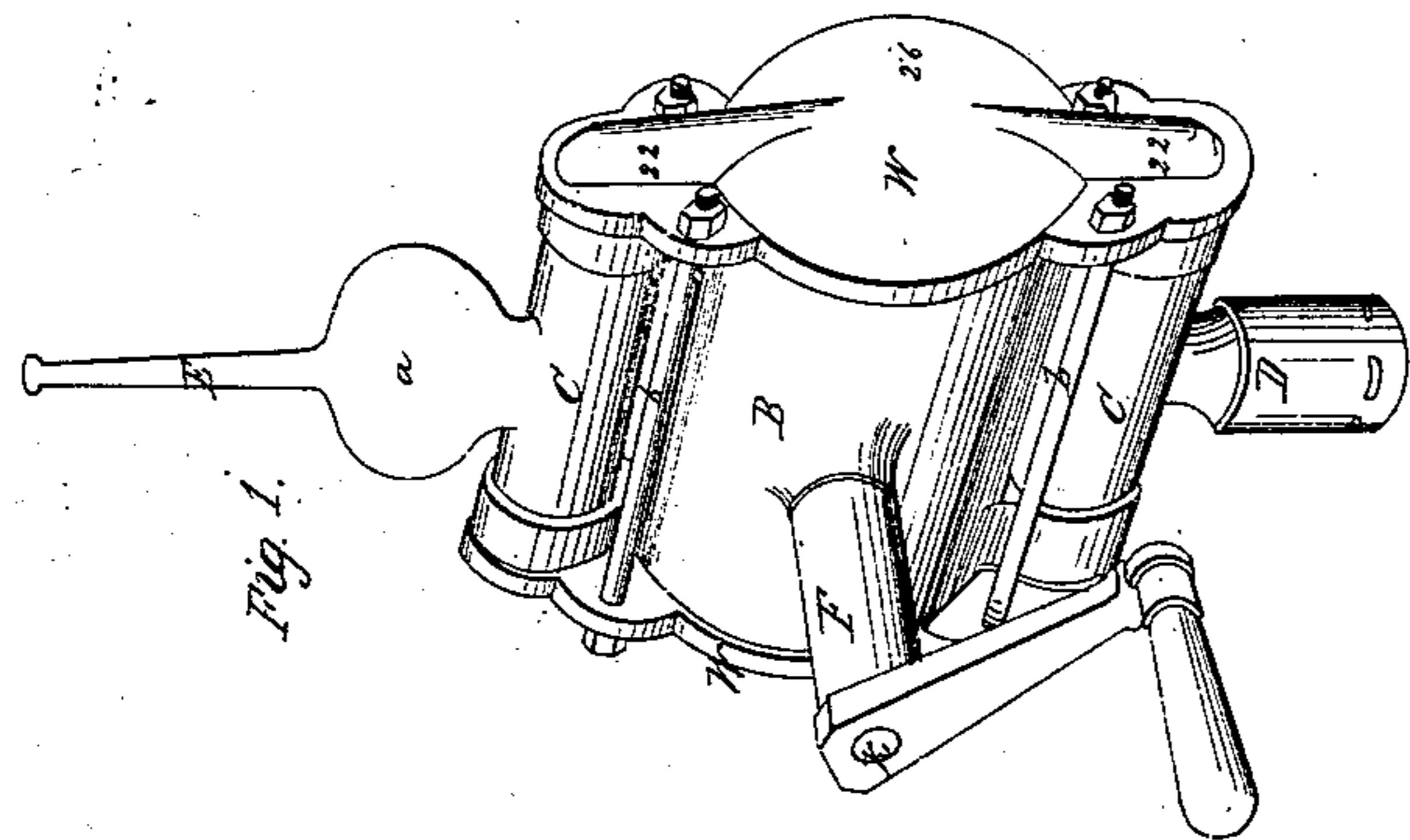
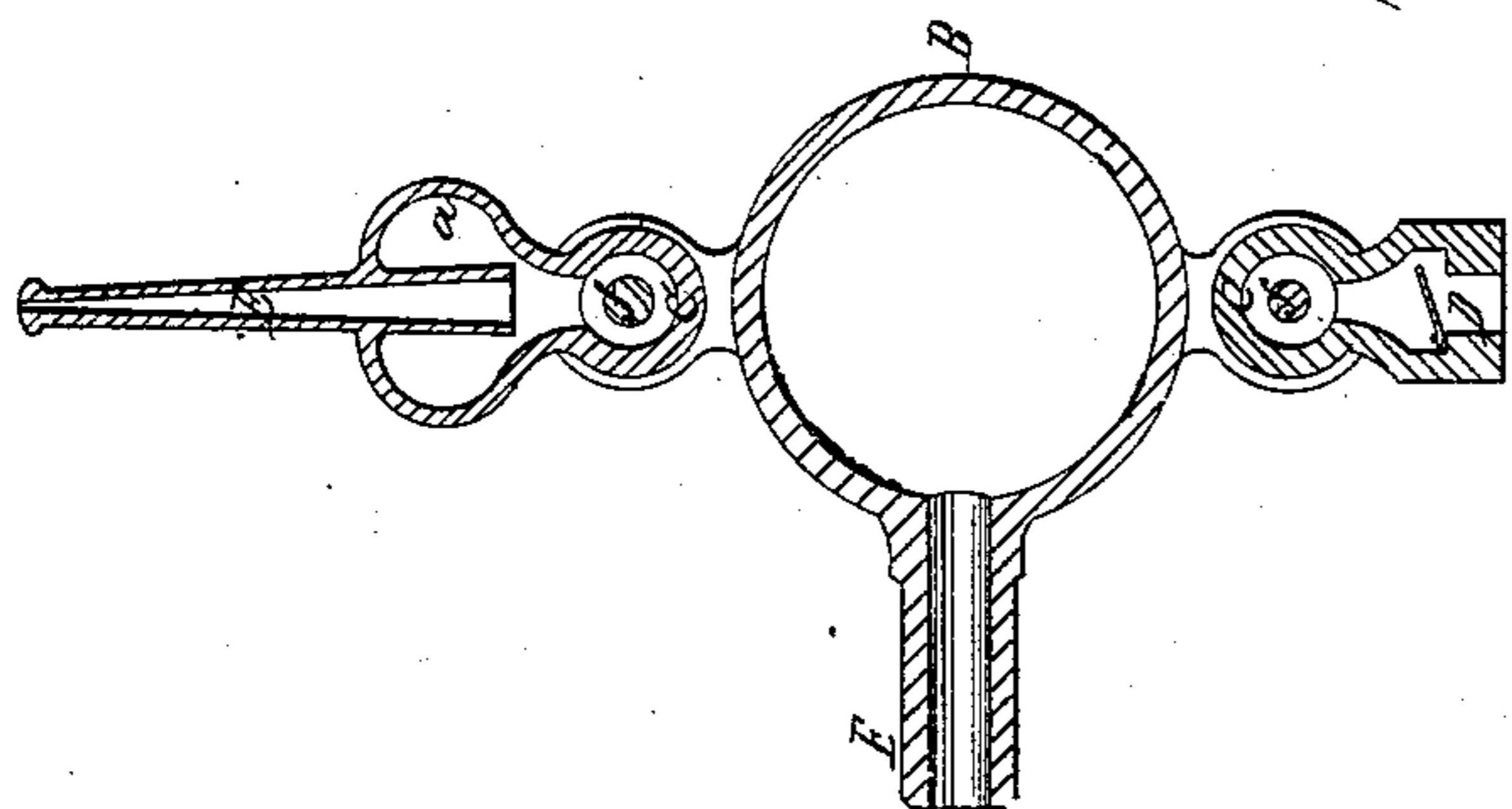
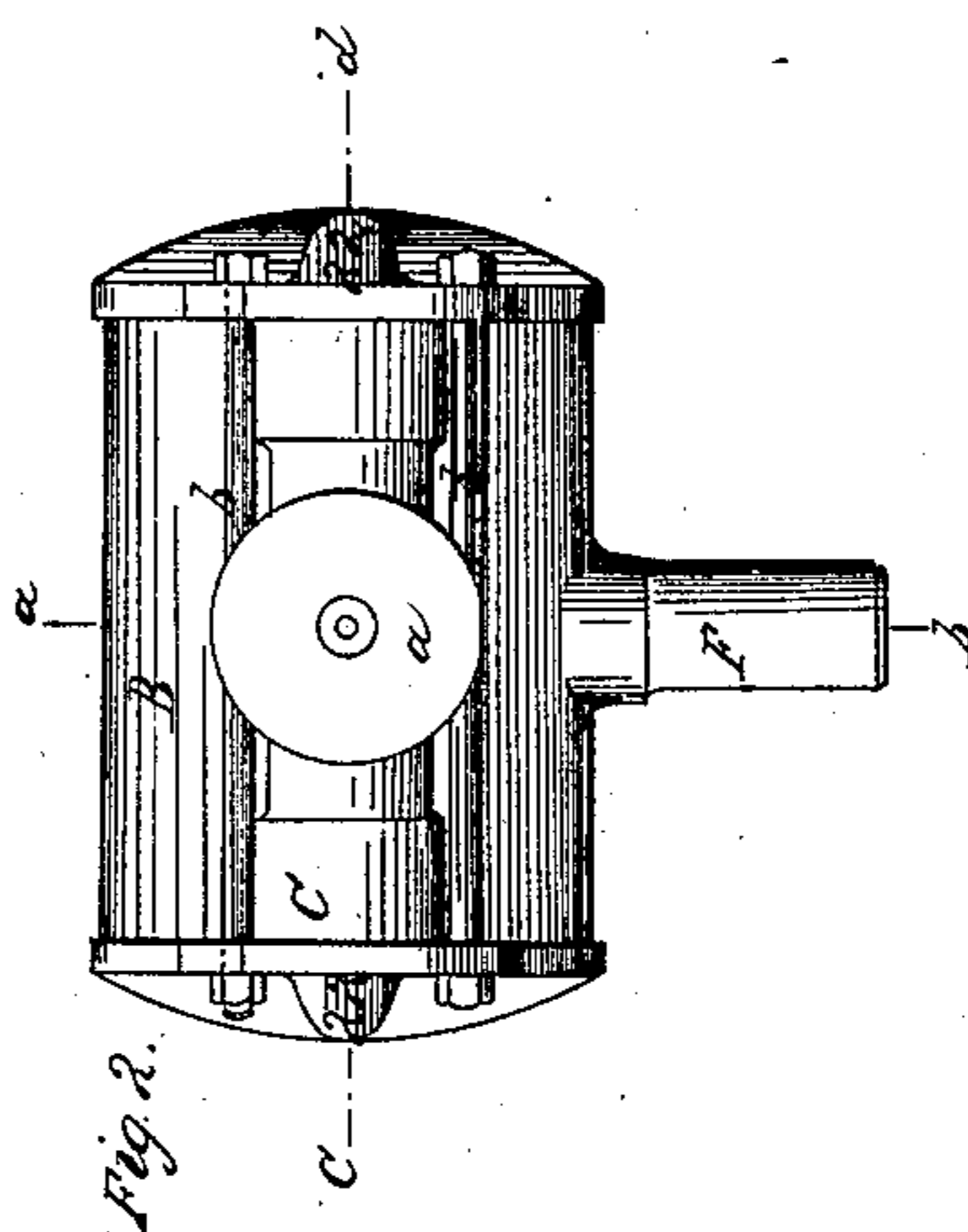
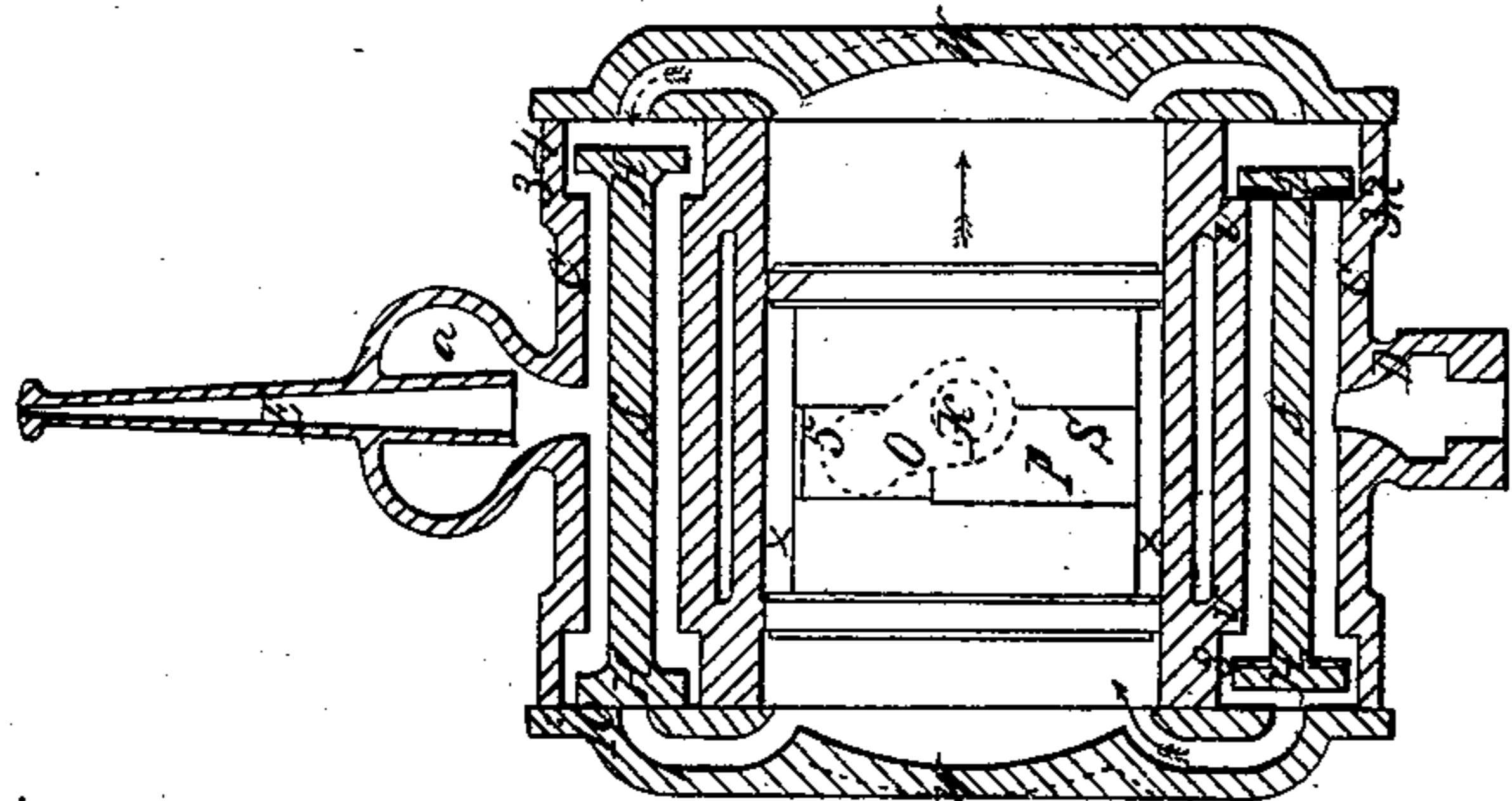
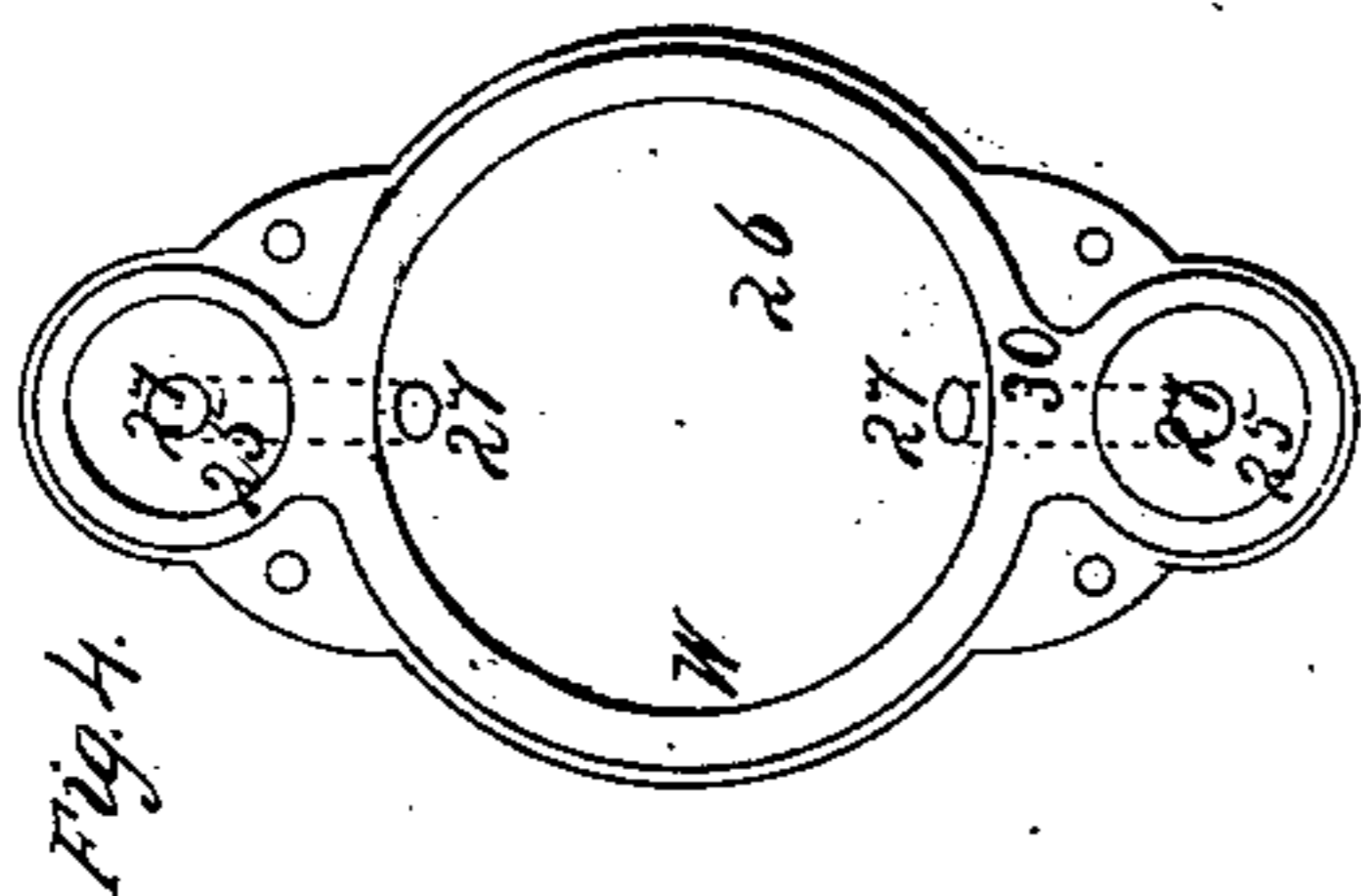


H. Pease,

Double Acting Pump,

N^o 17,768.

Patented July 7, 1857.



UNITED STATES PATENT OFFICE.

HENRY PEASE, OF BROCKPORT, NEW YORK, ASSIGNOR TO HIMSELF AND ECKLER,
BUSWELL AND CO., OF SAME PLACE.

PUMP.

Specification of Letters Patent No. 17,768, dated July 7, 1857.

To all whom it may concern:

Be it known that I, HENRY PEASE, of Brockport, in the county of Monroe and State of New York, have invented a new and
5 useful Improvement in Suction and 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
10 drawings, making a part of this specification, in which—

Figure 1 is a side view, Fig. 2 is a plan or top view, Fig. 3 is a detached top view of the piston and device for driving the same, Fig. 4
15 is an inside view of one of the end caps. *a b* and *c d* are transverse sections.

Similar letters of reference indicate corresponding parts in the several figures.

To enable those skilled in the art to fully
20 understand and construct my invention I will proceed to describe it.

a air chamber—*B* cylinder—*c c* side pipes—*D* supply pipe—*E* discharge pipe—
25 *b b b b* bolts—*F* tubular box—*H H H H* valves—Fig. 3, *N N* ring packing. The cylinder *B*, side pipes *c c*, suction pipe and discharge pipe, air chamber and tubular box may be made in one piece or separately. The rotating shaft *K* may be packed or not
30 by using a stuffing nut at the outer end of the tubular box *F*. The piston *p*, Fig. 3, is made longer than the common piston in order to give room for the movement of the crank *O* between the two extreme portions
35 or ends of the piston.

y is the slab or flat portion of the piston, which is made smaller than the two extreme ends, as plainly shown at *X X*, section *c d*, and again at Fig. 3. The piston has a groove
40 or slot midway, running crosswise, as shown at *S*, section *c d*, and also at Fig. 3. This slot or groove is of the proper size to receive the wrist box 5, as shown at section *c d*, and allow it to play freely up and down.

45 *m m* are the guide or guard rods placed in the piston in such a manner as to give room for the crank inside, that is between the rods and flat portion of the piston and leaving space sufficient between the two rods for the
50 hub of the crank to work free when in operation, thereby preventing the piston from revolving. The guide rods *m m* are used for another purpose and one of much importance; that is when the crank *O* and
55 box 5 are in their proper places and the rods

m m are in their places and secured as shown at Fig. 3, the rotating shaft may be connected to and disconnected from the crank without any trouble or danger of crank and wrist box getting out of place.

60 The piston when completed in the manner above described may be put into the cylinder and when the female screw in the crank hub is brought to coincide with the tubular box *F* the rotating shaft *K* may be put in
65 through the tubular box and screwed into the crank hub.

H H H H are four valves. Two of them are secured to a small rod *f* in the lower side pipe and seat on the inside shoulder of the
70 valve chamber at *v*, section *c d*. The rod *f* is of the length to correspond with the side pipe and valve chamber so as when one valve is shut the other valve will be just halfway of the opposite valve chamber, as shown at *S*,
75 section *c d*, for the free admission of the water when the piston is in operation, as will be further shown. The two upper valves and rod are made the same as the lower ones
80 with this exception, the rod *f* is a little longer in order to allow the valves to seat on the outer ends of the valve chamber against the caps *W*, as shown at 10, section *c d*, thereby stopping the back flow of the water,
85 as plainly shown in the drawings.

The cylinder *B* and side pipes *c c* are covered at each end with a cap *W*, Fig. 1, of sufficient dimensions to cover the cylinder *B* and side pipes *c c*, as shown at Fig. 1, and secured by four bolts *b b b b*. The main
90 part or the part 26 that covers the cylinder would nearly represent the one-half of a hollow sphere which forms a sort of chamber at the end of the cylinder *B*.

22 represents the induction and eduction
95 passages from the side pipes *c c* into the chamber 26, plainly shown at Fig. 4, 27.

The caps *W* are easily removed by taking out the four bolts *b b b b*, thus making the piston and valves accessible for repacking
100 when required.

To operate this pump, motion is given to the rotating shaft *K*, thereby giving a reciprocating motion to the piston (by means of the crank *O*) drives the water, closes the
105 induction valve at 32 and opens the eduction valve at 34, section *c d*, and forces the water through the discharge pipe, as shown by the arrow, and at the same time the piston receding from the other end draws the
110

water through the induction pipe, the valve at 8 being open, thus filling the cylinder at one end while discharging at the other, the valve at 10 being closed by the pressure of the water, making, when arranged in combination with its several parts as described, a compact, neat, cheap, and durable reciprocating pump in every respect, portable pump calculated to take as little room as the common rotary pump of the day, being just as easy to attach power thereto and not liable to get out of order.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is—

The guide rods *m m* constructed and arranged as herein described for the purpose of preventing the rotation of the piston and of facilitating the attachment and detachment of the shaft to and from the crank O.

HENRY PEASE. [I. s.]

Witnesses:

A. J. WILKIN,
L. CHAMBERLAIN.