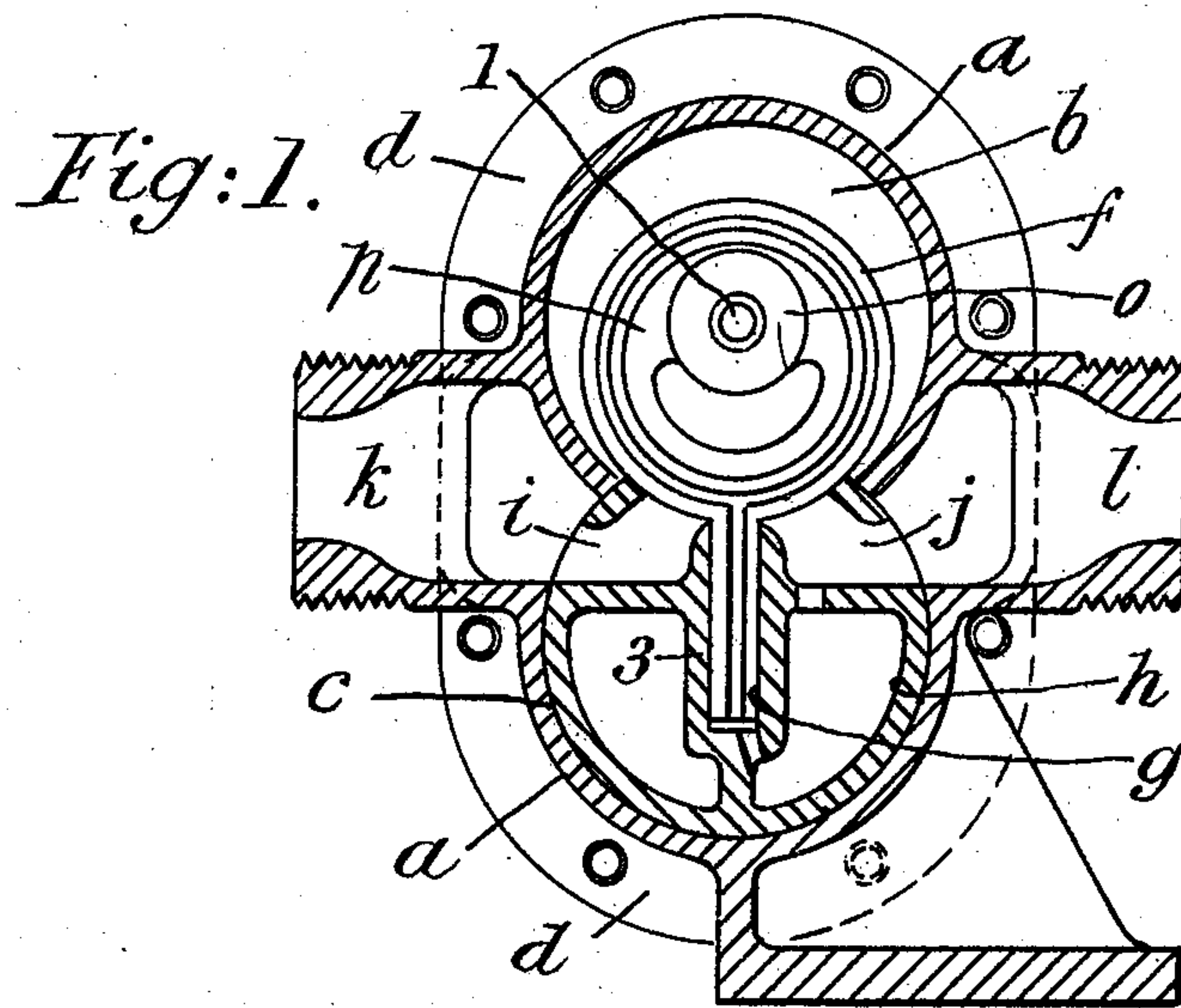


No. 862,404.

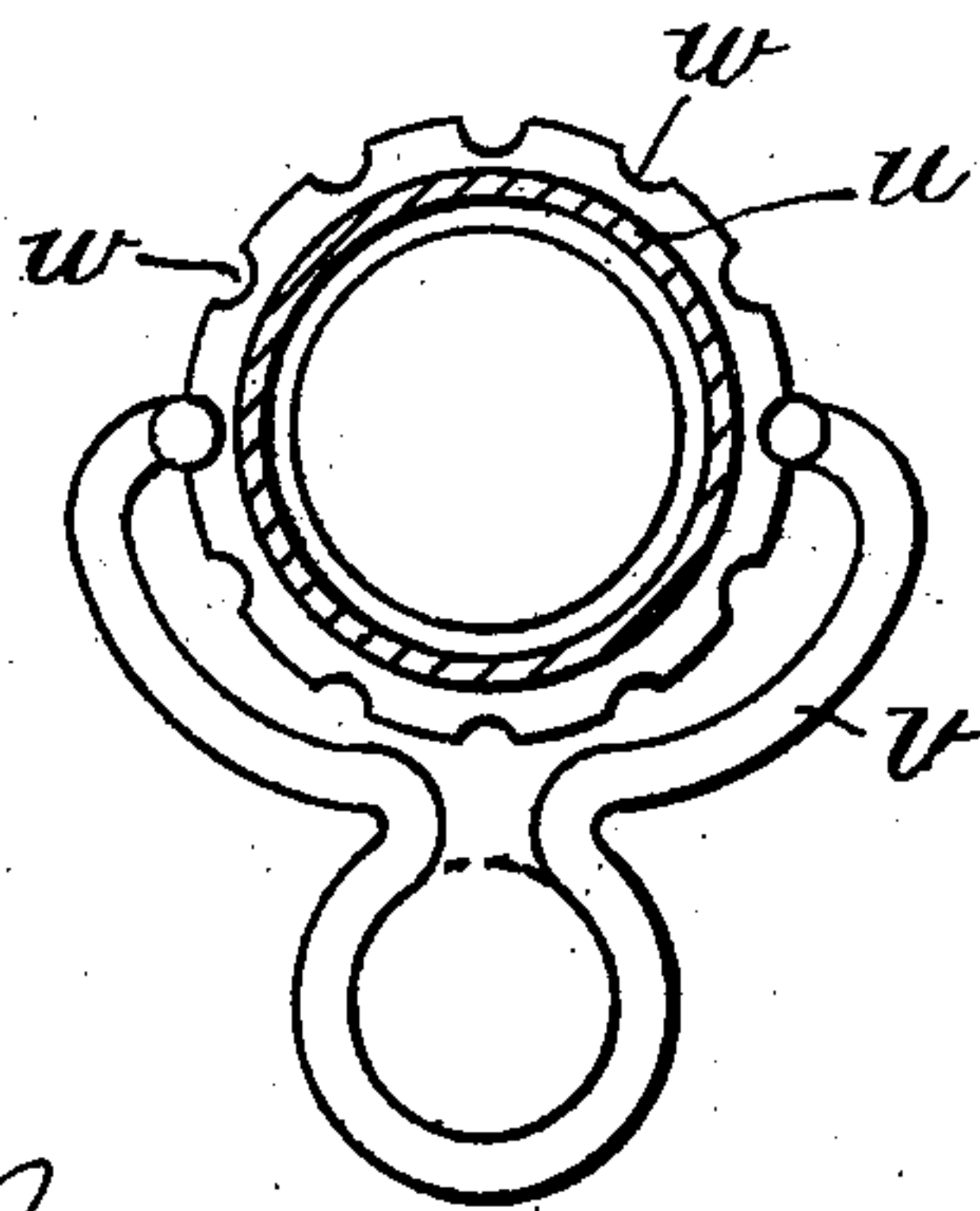
PATENTED AUG. 6, 1907.

F. LAMPLOUGH.  
ROTARY PUMP, EXHAUSTER, AND BLOWER, &c.  
APPLICATION FILED JULY 21, 1906.

2 SHEETS—SHEET 1.

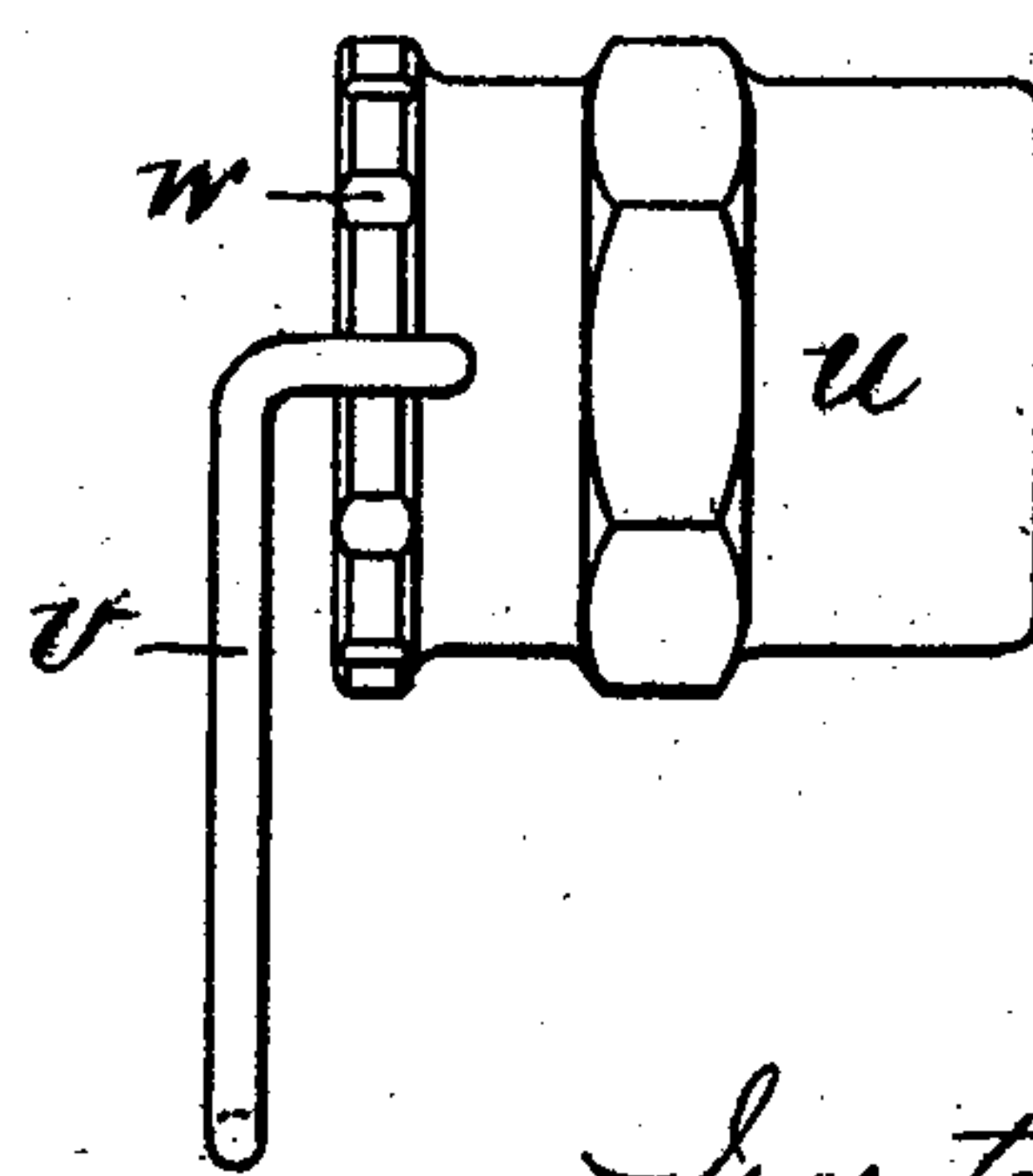


*Fig:6.*



*Witnesses:*  
*R. F. Smith*  
*Wm. C. Hammond*

*Fig:7.*



*Inventor:*  
*Frederick Lamplough*  
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*Attorneys*

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2 SHEETS—SHEET 2.

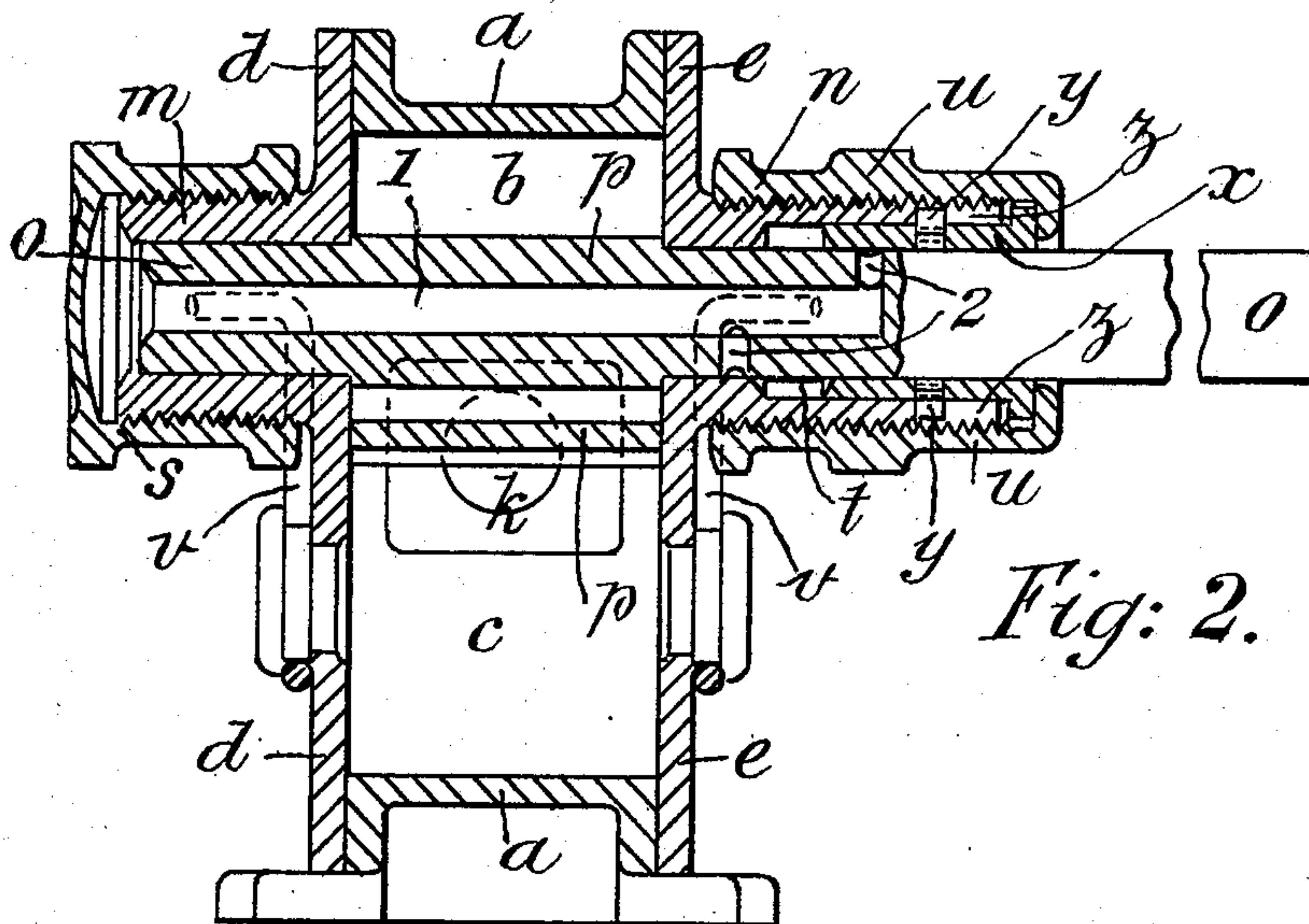


Fig: 2.

Fig: 4.

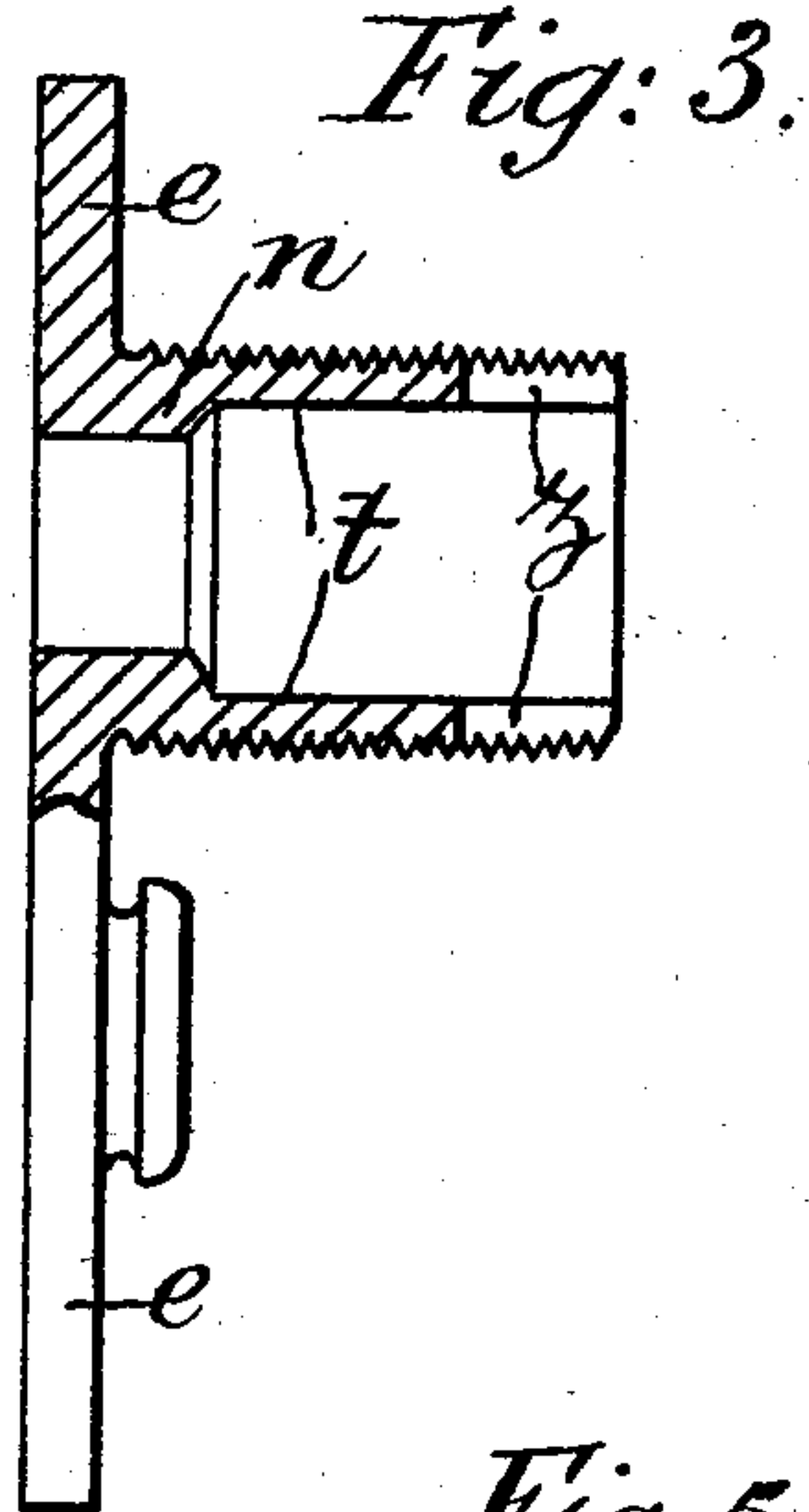


Fig: 3.

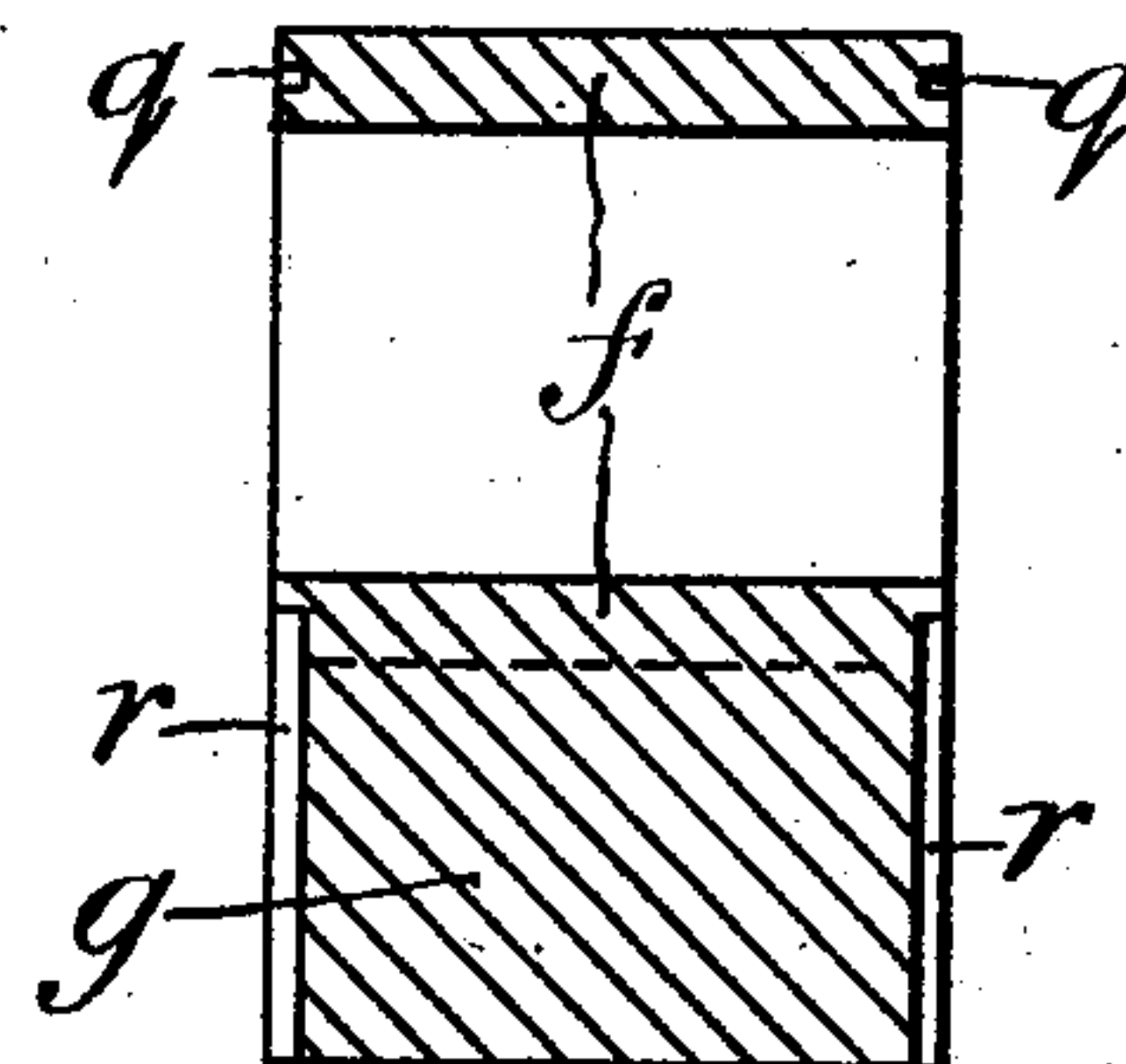
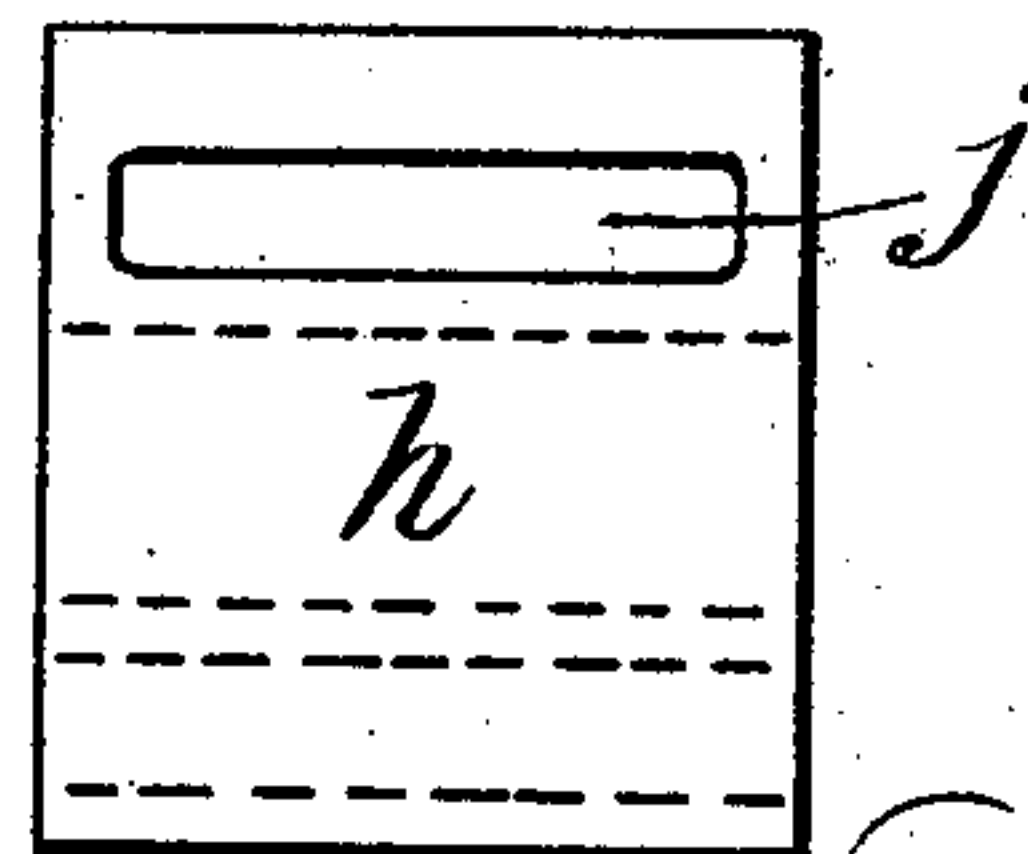


Fig: 5.



Witness:  
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Wm. P. Hammond

Inventor:  
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By Knight Bros.  
Attorneys



# UNITED STATES PATENT OFFICE

FREDERICK LAMPLOUGH, OF LONDON, ENGLAND.

ROTARY PUMP, EXHAUSTER, AND BLOWER, &c..

No. 862,404.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed July 21, 1906. Serial No. 327,242.

*To all whom it may concern:*

Be it known that I, FREDERICK LAMPLOUGH, a subject of the King of Great Britain, residing at London, England, have invented a new and useful Rotary Pump, Exhauster, and Blower or the Like, of which the following is a specification.

The invention has for its object an improved construction of rotary pump, which may be used as a pump, exhauster or blower, or the like.

10 The invention will be described by the aid of the accompanying drawings, in which

Figure 1 is a cross section of the pump, and Fig. 2 is a longitudinal section of the same with the piston, its tongue and guide for the latter omitted. Fig. 3 is a sectional elevation of one end of the pump casing and its bearing for the driving shaft. Fig. 4 is a longitudinal section of the piston and its tongue piece. Fig. 5 is a side elevation of the rocking guide for the piston tongue piece. Fig. 6 is a sectional end view and Fig. 7 is a side elevation of parts for preventing the accidental unscrewing of the gland of the stuffing box through which the driving shaft passes.

20 The pump casing consists of a part *a* having two cylindrical spaces *b c*, and of two end covers *d e*. In the cylindrical space *b* is located the pump piston *f*, while in the cylindrical space *c* is an oscillating piston *h* serving as a valve and as a guide to the tongue piece *g* extending from the pump piston *f*. The pump cylinder *b* is open along a peripheral line and a portion of the oscillating piston *h* fits within such opening and projects slightly into the pump cylinder *b*.

30 The oscillating piston *h* has inlet and outlet ports *i j* therein which communicate with the interior of the pump cylinder *b* and with the inlet and outlet passages *k l* of the pump body or casing, which latter passages are formed on a line intermediate of the two cylindrical spaces *b c*.

40 The end covers *d e* are provided with bearings *m n* to receive a driving shaft *o* passing through the center of the pump cylinder *b*.

On the shaft *o* is fixed or formed an eccentric *p*, on which is mounted the pump piston *f*, which latter is concentric with the eccentric and is in contact with the interior of the pump cylinder *b* on a line across its periphery and at its ends. The tongue piece *g* is of the full width of the pump piston *f* and at its ends is in working contact with the end covers *d e*.

50 The ends of the pump piston *f* and of its tongue piece *g* are grooved respectively at *q r* to receive suitable packing.

The bearing *m* is closed by an oil cap *s* screwed thereon, and the bearing *n*, through which the driving shaft *o* passes, is provided with a stuffing box *t*, and in order to prevent the accidental unscrewing of the oil cap *s* and of the gland *u*, a forked spring *v* is secured by its center to each end cover *d e* and its arms, which at their ends are bent at right angles to the main body, clip

within recesses *w* formed in a rim on the oil cap *s* and in a rim on the stuffing box gland *u*.

In order to prevent the unscrewing of the gland *u* by the rotation of the shaft *o*, the sleeve *x* which is forced by the gland *u* against the packing, is fitted with two pins *y* which pass into slots *z* formed in the bearing *n* on which the gland *u* is screwed.

Lubrication is effected by the removal of the oil cap *s* and forcing the lubricant through a boring *l* and cross holes *2* in the shaft.

The action of the pump is as follows:—The periphery of the pump piston *f*, when carried round by the eccentric *p*, sweeps the walls of the pump cylinder *b*; the tongue piece *g* fits within and travels up and down in a guide *3* formed in the oscillating piston *h*. When the pump piston *f* is at its lowest position, it rests within a seat in the oscillating piston *h*, as shown at Fig. 1, which latter is then in its central position, and closes the ports *i j* in said oscillating piston; on the further motion of the pump piston *f* it, by means of the tongue piece *g*, rocks the oscillating piston *h* so as to open communication between the ports *i j* and the interior of the pump cylinder, thus commencing a fresh delivery and suction stroke. The water, when the stroke commences, passes into the pump cylinder *b* through one of the ports *i j* of the oscillating piston *h* and out of said cylinder through the other of said ports. The two ports are normally open to the suction and delivery sides, and are closed only by the pump piston *f* at the moment of completion of the suction and discharge stroke. By this means the possibility of the water returning at this particular period is prevented. The pump, being symmetrical in its parts, can be driven in either direction with equal efficiency.

In the above description of the invention it is described as a water pump; it may however be used as an exhauster or blower or the like as will be readily understood.

What I claim is:—

In a rotary pump, exhauster and blower, the combination of a casing having two cylindrical spaces, the one acting as a pump cylinder, the other as a valve chamber, said spaces communicating with each other, inlet and outlet passages opening direct into the valve chamber, a driving shaft passing through the pump cylinder, an eccentric on said shaft, a pump piston on said eccentric, a solid unperforated tongue on said pump piston, an oscillating valve having ports communicating with the inlet and outlet passages and with the interior of the pump cylinder, said valve having a guide for the said tongue and being of such a size to project slightly into the pump cylinder to form a seat for the pump piston at the completion of the suction and discharge stroke, the pump piston thereby closing the inlet and outlet ports in the valve, substantially as herein set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

FREDERICK LAMPLOUGH.

Witnesses:

B. J. B. MILLS,  
WM. GIRLING.