

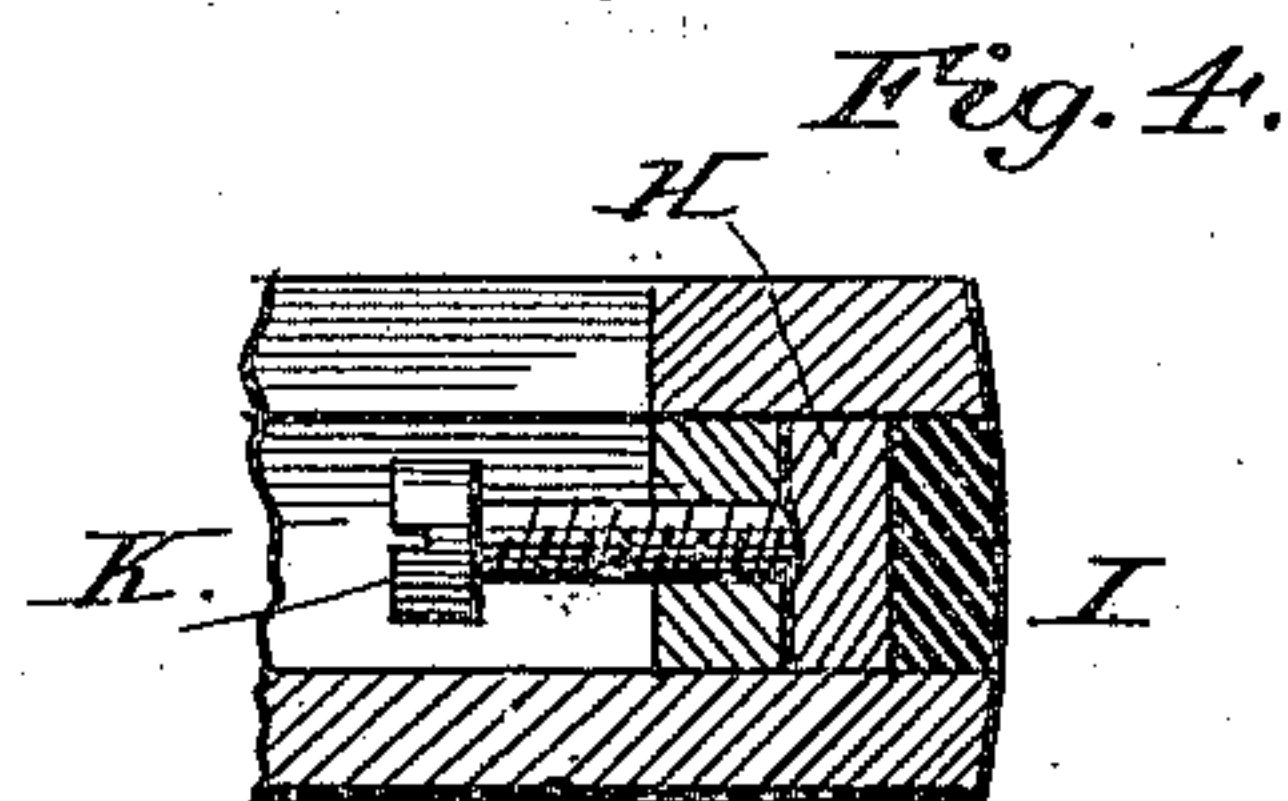
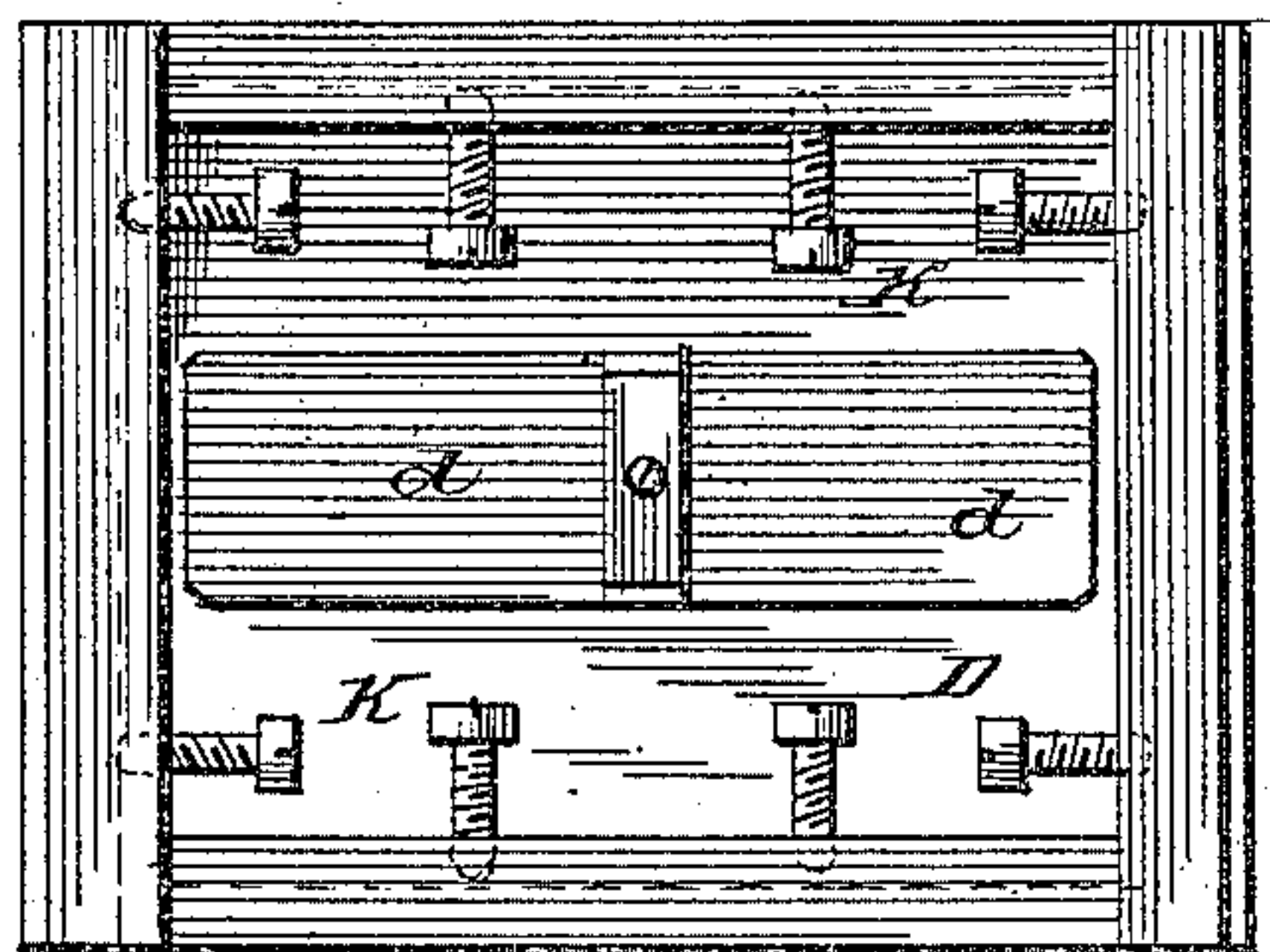
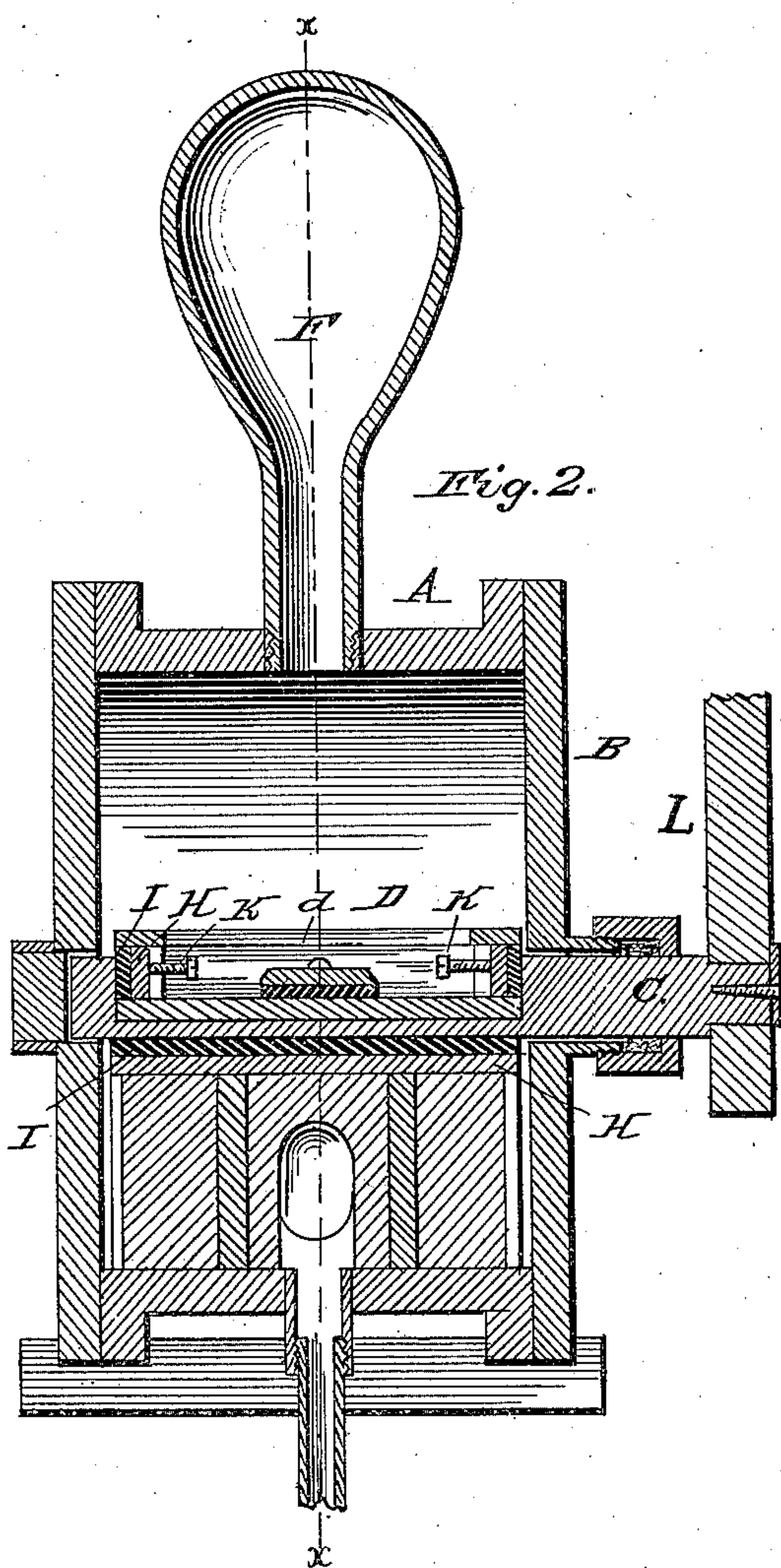
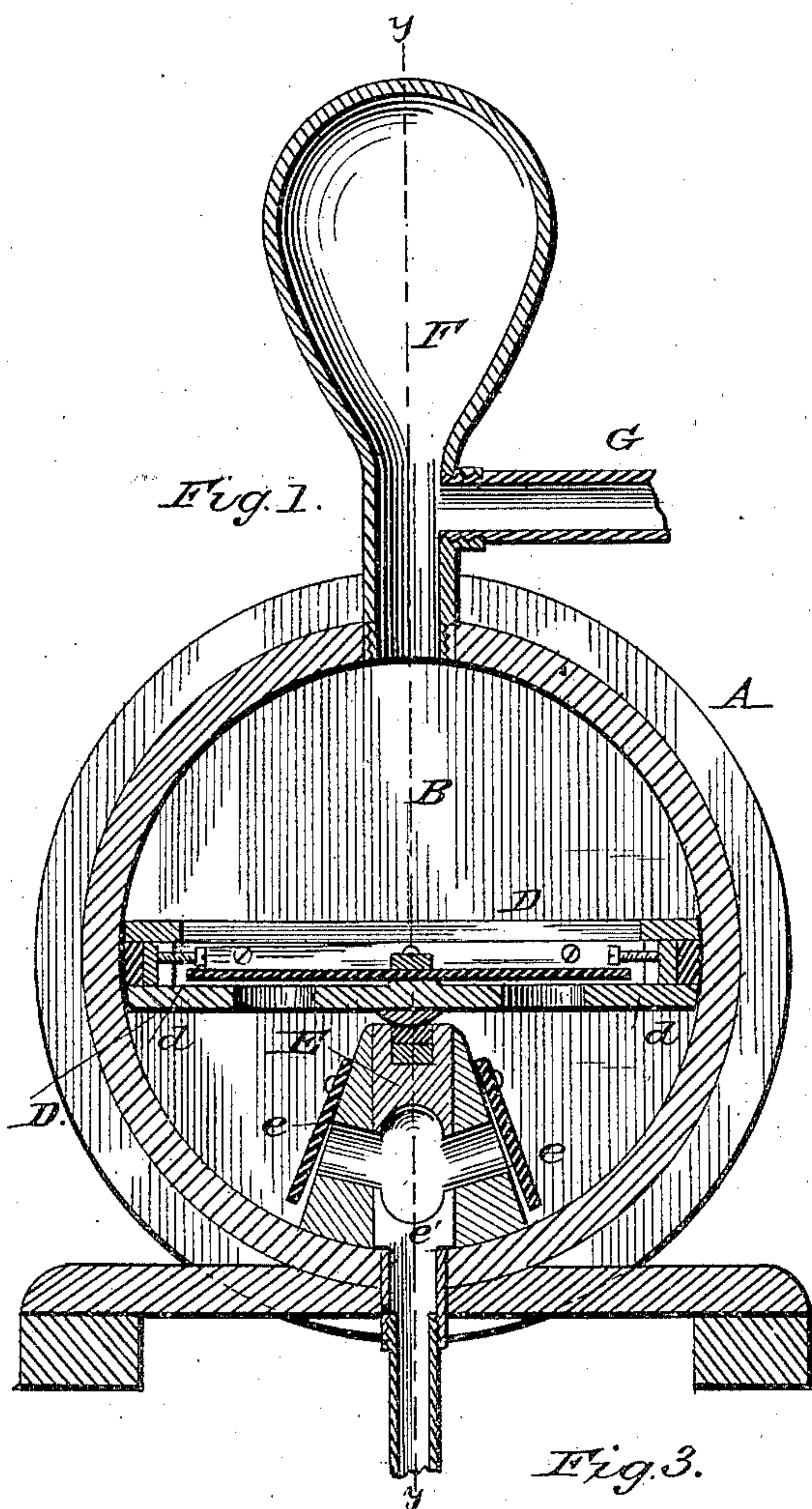
(No Model.)

L. BOUVIER.

PUMP.

No. 309,331.

Patented Dec. 16, 1884.



WITNESSES:

*Wm. S. Dietrich.*  
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INVENTOR.

*Louis Bouvier*

*By Daniel Breed*  
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# UNITED STATES PATENT OFFICE.

LOUIS BOUVIER, OF SAN DIEGO, CALIFORNIA.

## PUMP.

SPECIFICATION forming part of Letters Patent No. 309,331, dated December 16, 1884.

Application filed December 7, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS BOUVIER, a citizen of the United States, residing at San Diego, in the county of San Diego, in the State of California, have invented a new and useful Improvement in Pumps, of which the following is a specification.

My invention consists of a novel construction of oscillating pumps, including a new mode of packing the valve and tightening the same when worn, all of which will be fully understood by the following description and claims.

In the accompanying drawings, Figure 1 is a vertical section of my pump, made transversely of the cylinder, on the line *x x* of Fig. 2. Fig. 2 is a vertical section of the same on the line *y y* of Fig. 1. Fig. 3 is a side view of the oscillating valve detached from the cylinder. Fig. 4 is a detached view showing the construction of the adjustable packing for the valve.

In the accompanying drawings, A represents the hollow cylinder of the pump, with end plates, B, which may be attached to the cylinder by means of screws. These end plates have central bearings for the shaft C, which carries an oscillating diaphragm, D, having two valves, *d*, therein. In the lower part of the hollow cylinder is a stationary half-diaphragm, E, also having two valves, *e*, therein, and a central water-supply passage, *e'*. At the top of the cylinder is an air-chamber, F, and a water-discharge pipe, G, so arranged with the air-chamber as to give a continuous flow of water when the pump is operated.

The most important feature of my present improvement is the construction of the oscillating diaphragm D, which is provided with adjustable packing, as follows: On all sides of this diaphragm D are strips of packing H, inserted into grooves in the edges of diaphragm, and accompanied with pieces of leather, rubber, or other flexible packing, I, both being made adjustable by means of screws K, the ends of which press against the adjustable strips H. By this construction and arrangement the joints between the oscillating diaphragm and the hollow cylinder can be easily tightened to compensate for the wear. The shaft C is provided with a crank, L, to which a connecting-rod may be attached in the usual manner to give a reciprocating motion by means of any desirable power, and thus give an oscillating motion to the diaphragm D.

Having described my invention, what I claim is—

1. In a pump, the oscillating diaphragm D, provided with flexible packing I and adjustable strips H, and means for compressing them, in combination with the hollow cylinder A, substantially as and for the purposes set forth.

2. In a pump, the oscillating diaphragm D, having flexible packing I and adjustable strips H, and screws K, in combination with the hollow cylinder A, as and for the purpose set forth.

LOUIS BOUVIER.

Witnesses:

BEN STEVENS,  
JOHN GRAY.