

A. S. CAMERON.

Pump-Valves.

No. 156,769.

Patented Nov. 10, 1874.

Fig: 1

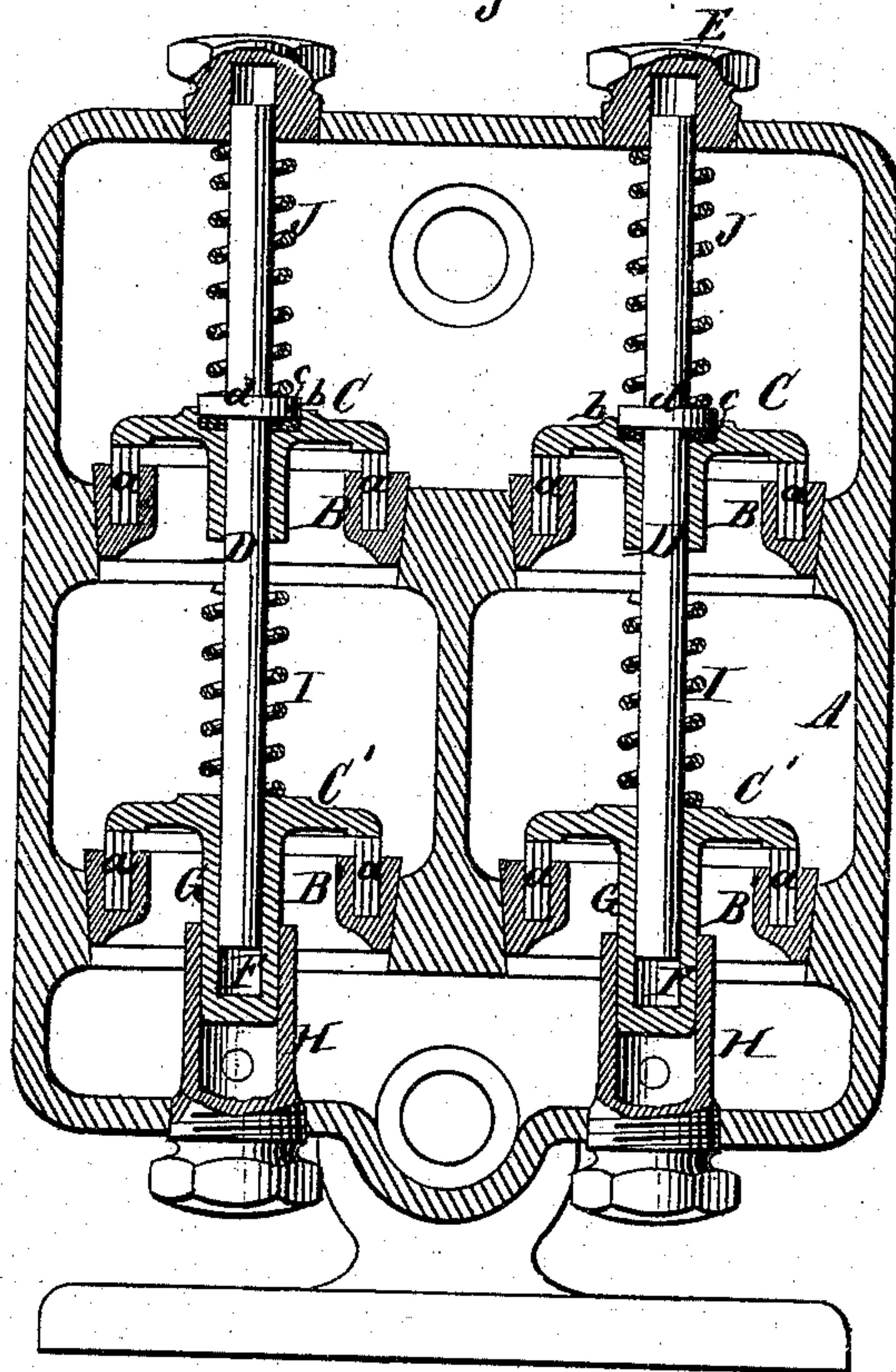


Fig: 3.

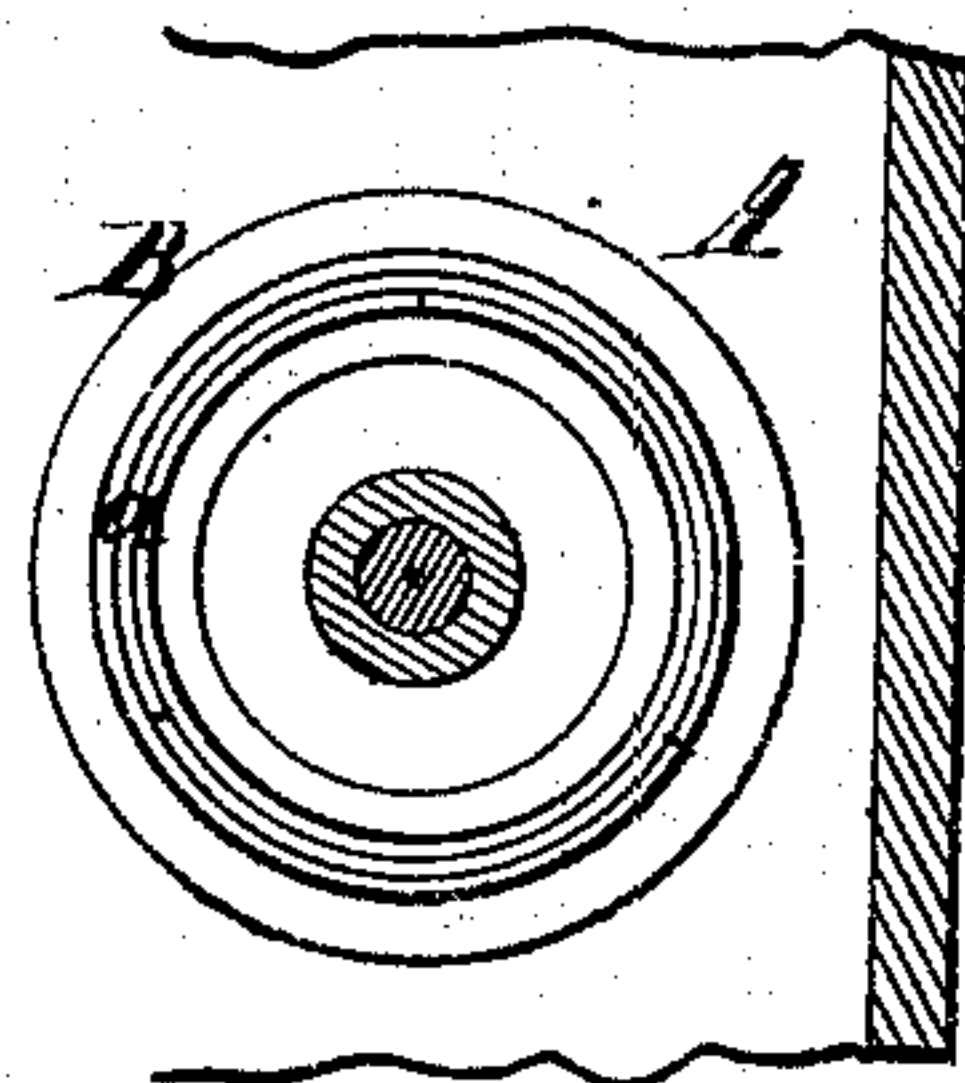
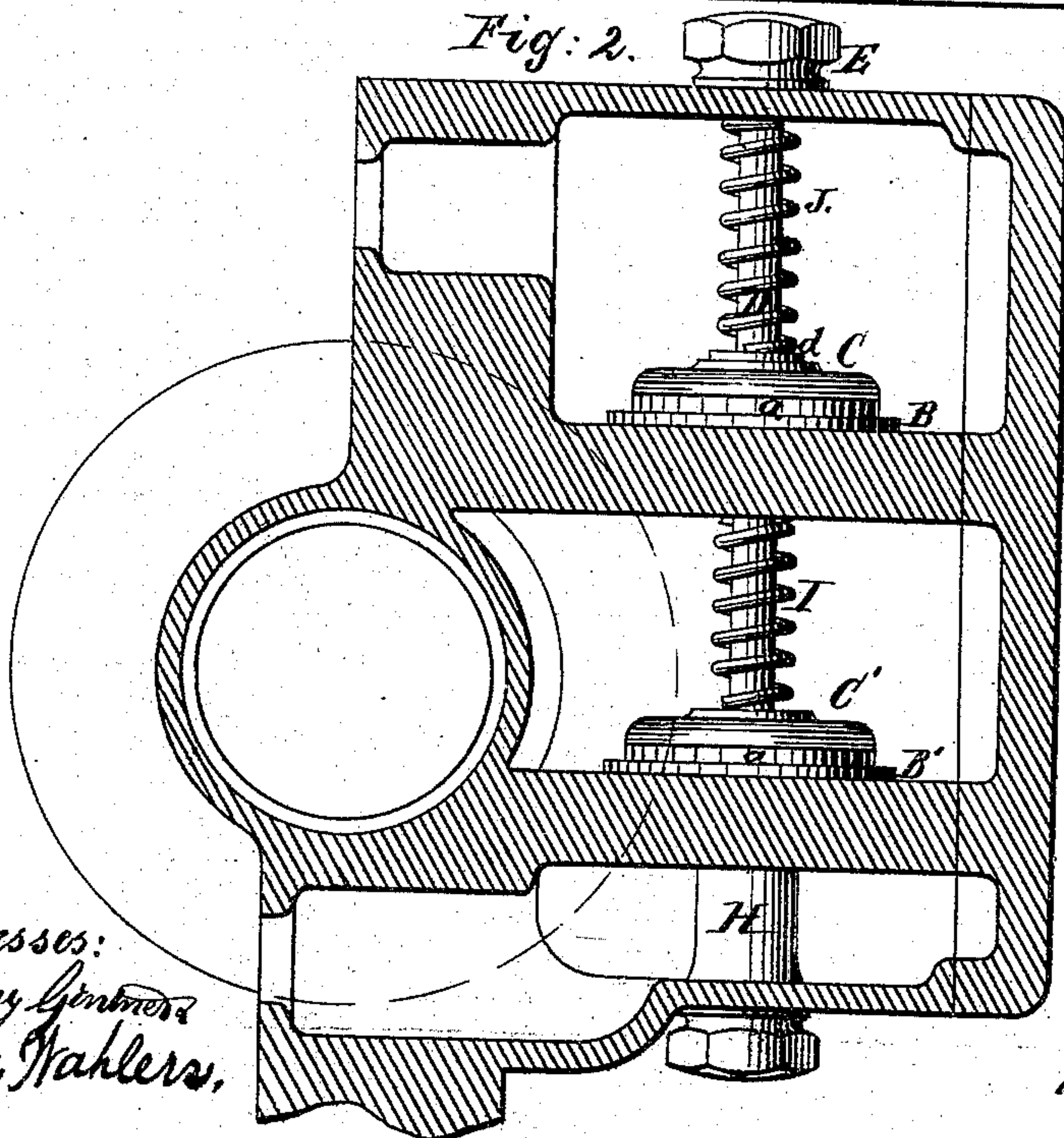


Fig: 2.



Witnesses:
Henry G. Gentry
Chas. W. Hahler.

Inventor:
Adam S. Cameron
per
Van Santvoord & Hauff
Attys

UNITED STATES PATENT OFFICE.

ADAM S. CAMERON, OF NEW YORK, N. Y.

IMPROVEMENT IN PUMP-VALVES.

Specification forming part of Letters Patent No. 156,769, dated November 10, 1874; application filed October 7, 1874.

To all whom it may concern:

Be it known that I, ADAM S. CAMERON, of the city, county, and State of New York, have invented a certain new and useful Improvement in Pump-Valves, of which the following is a specification:

This invention relates to certain improvements on that class of valves which I have described in my patents, No. 61,155, dated January 15, 1867, and No. 72,363, dated December 11, 1867.

My present improvement consists in a spindle which extends through the upper valve and into a socket formed in a stem projecting from the under side of the lower valve, said spindle being provided with a shoulder, which bears against a packing-piece situated in a recess in the back of the upper valve, while the tubular stem of the lower valve is guided in a hollow plug that rises from the bottom of the valve-chamber, each of the valves being exposed to the action of a spring, in such a manner that the necessity of central bearings in the valve-seats is avoided, leaving a clear circular opening for the passage of the liquid, and at the same time the valves are supported both above and below their seats, and leakage between the valves and their guide rods or spindles is prevented.

This invention is illustrated in the accompanying drawing, in which Figure 1 represents a longitudinal vertical section of a valve-chamber containing my improved valve. Fig. 2 is a transverse section of the same. Fig. 3 is a horizontal section of the same.

Similar letters indicate corresponding parts.

In the drawing, the letter A designates the valve-chest of a pump, in which are situated the valve-seats B B', one above the other. These valve-seats are formed of rings cast of brass or other suitable material, and they are secured in the valve-chest by turning their outer edges conical, and driving them down in correspondingly conical sockets in the chest; or they may be secured in any desirable manner. The faces of the seats B B' are provided with annular grooves to receive rings *a a*, of leather or other suitable material, which are placed edgewise and so as to break joints, the upper edges of said rings being faced off to form the seats for the valves C C'. If one of

these seats should wear out, it can easily be refaced or entirely renewed without disturbing the metallic portions B B' of the seats. If desired, however, the rings *a a* may be inserted into the bodies of the valves, instead of placing them into recesses in the seats B B'.

This arrangement of forming the faces of the valves or of the seats I have fully described in my patent, No. 61,155, dated January 15, 1867.

The valves C C' are guided by a spindle, D, the upper end of which extends into a hollow plug, E, secured in the top of the valve-chest, while its lower end extends into a socket, F, formed in the stem G of the lower valve C'; said socket being closed at the bottom, and being of such depth that the valve C' can rise on the spindle. The stem G of said valve is guided in a tubular plug, H, which is secured in the bottom of the valve-chest. A spring, I, which is wound round the spindle D, has a tendency to depress the valve C' on its seat. This spring bears against the end of the hollow stem of the upper valve C. In the back of this upper valve is formed a recess, *b*, to receive a packing-piece, *c*, and on the spindle D is formed a shoulder, *d*, which bears on this packing-piece, to prevent leakage between the valve and the spindle. A spring, J, which is wound round the upper part of the spindle D, serves to depress the shoulder *d* on the packing-piece *c*, and it also has a tendency to keep the valve C down on its seat B. By these means the valves C C' are supported both above and below their seats, while leakage between the upper valve and the spindle is prevented by the shoulder *d* and packing-piece *c*, and between the spindle and the lower valve no leakage can take place, since the socket in the stem of said lower valve is closed at the bottom. At the same time the space inside of the valve-seats is left entirely unobstructed for the free passage of the water. In some cases it may be desirable to dispense with the tubular plug H below for guiding the spindle. In such cases I guide the spindle on a center supported by arms secured in the seat of the upper valve C. In either case the spindle moves with upper valve, and is guided above and below this valve, and the arrangement is applicable where

only one valve is required, such as in single-acting pumps.

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

1. The spindle D, supported at one end in a tubular plug in the valve-chest, and at its opposite end in a socket formed in the stem of the lower valve C', said spindle being provided with a shoulder bearing on a packing-piece in the back of the upper valve C, in combination with the valves C C', and with a tubular plug, H, forming a guide for the stem of the lower valve, all constructed and operating substantially in the manner shown and described.

2. The valve C, placed loosely on the spindle D, in combination with said spindle, which is provided with a shoulder, *d*, bearing on the back of the valve, and which is guided both above and below said valve, to operate in respect to a valve, C', substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 30th day of September, 1874.

ADAM S. CAMERON. [L. S.]

Witnesses:

W. HAUFF,
E. F. KASTENHUBER.