

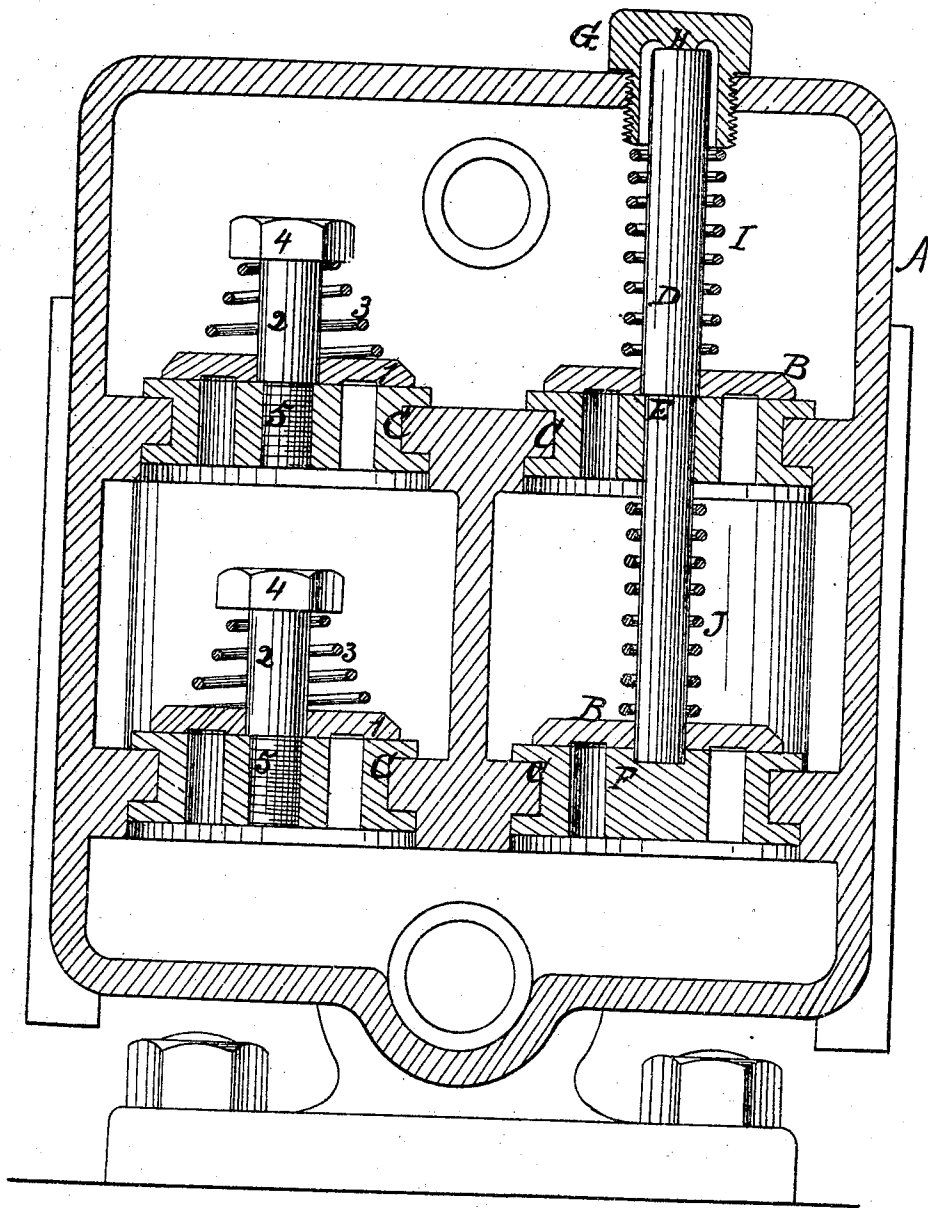
A. S. Cameron.

Steam-Pump.

N^o 72363

Patented Dec. 17, 1867

Fig: 1.



Witnesses
Alfred A. Pully.
Gustav Berg.

Inventor
A. S. Cameron
By VauSautons & Haaff
his Attorneys.

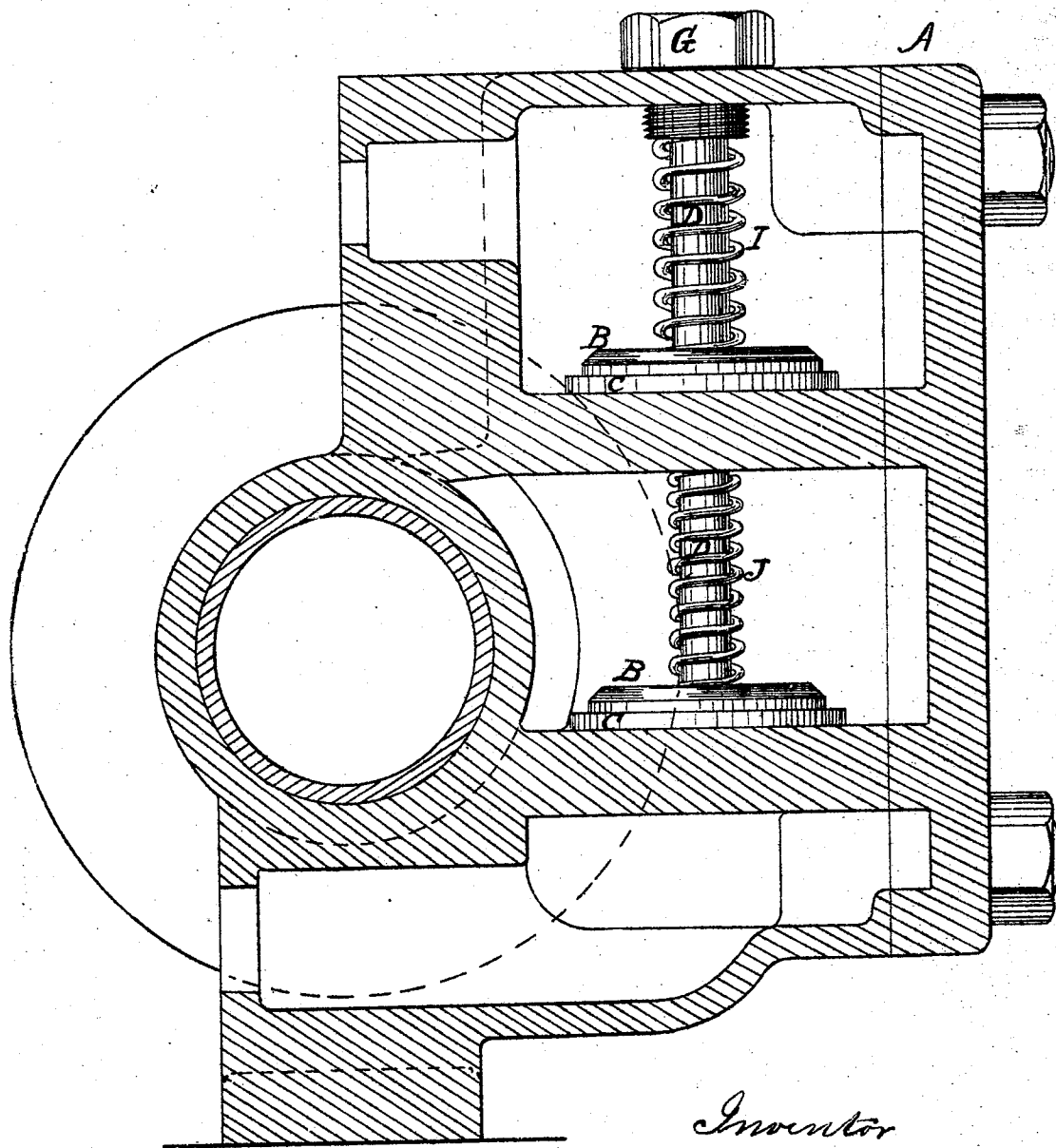
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Fig: 2.



Inventor

A. S. Cameron

By Van Santow & Hauss
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Witnesses

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Eustace Perry.

UNITED STATES PATENT OFFICE.

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

IMPROVEMENT IN STEAM-PUMPS.

Specification forming part of Letters Patent No. **72,363**, dated December 17, 1867.

To all whom it may concern:

Be it known that I, A. S. CAMERON, of New York, corner of Twenty-Second street and Second avenue, in the county and State of New York, have invented a new and useful Improvement in Steam and other Pumps; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which drawing—

Figure 1 represents a vertical longitudinal section taken through the valve-chamber of a pump that contains my improvement. Fig. 2 is a cross-section, in which are seen the valves to which my improvement is applied.

Similar letters indicate corresponding parts.

This improvement relates to the valves of pumps, and is intended, among other things, to remedy a defect in the means used at present in holding and guiding such valves.

The arrangement now in common use for holding and guiding valves is represented at the left-hand side of the valve-chest shown in Fig. 1, where the letters C C designate the valve-seats, and the numerals 1 1 the valves which close the openings in the seats. The valves 1 are loose upon short bolts 2, whose ends 5 have screw-threads cut upon them, and are screwed into tapped holes which are made in the centers of the seats. The said bolts 2 are inserted in their places after first removing the crown or one side of the valve chest or chamber, and are then screwed into the seats by a wrench applied to their heads. The length of the bolts must be such, having reference to the height of the valve-chamber, as will allow the said bolts to be inserted and screwed to their places by working or operating with the necessary tools within the chamber. The shank of the bolt is surrounded by a spiral spring, 3, which presses the valve down to its seat, the upper bearing of the spring being against the under side of the bolt-head. This arrangement leaves the upper part of the bolt unsupported, and its screw is not locked, and in practice it is found to work loose from the seat, whereby the efficiency and working of

the valves are seriously impaired or altogether destroyed.

My improvement, by which these defects are obviated, is shown in Fig. 2 and in the right-hand side of Fig. 1, the letter B designating the valves to which it is applied. The said valves B are in the same vertical line with each other, one being in the lower and the other in the upper valve-chamber of the pump. Their seats C C are of the usual character, the valves, while closing the water-passages, resting on their flat upper surfaces. The said valves B B have a common spindle, D, by means of which they are guided to the seats in closing. The said spindle goes through the top or crown of the valve-chest, through the upper valve, B, and its seat C, thence through the lower valve-chamber, through its valve B, and rests in a socket, F, made for it in the center of the lower valve-seat. Its end is fitted in the socket without screw-connections, and it can consequently be lifted out at pleasure. The spindle is secured in proper position by means of a hollow nut, G, having a screw-thread tapped in the hole in the crown or top of the chest, through which the spindle is inserted, the head of the nut overlapping the edge of the hole and making a close joint, which is, if found necessary, made tighter by suitable packing.

By this arrangement and construction, the top of the spindle is surrounded and inclosed by the nut, from the inner side or bottom of whose head a button, H, projects downward, and presses directly on the top of the spindle, which is in that manner clamped and secured in place. Both the valve-seats C C are held down in their places by the spindle, the lower seat by the foot of the spindle and the upper one by its shoulder E, which is formed around the spindle at the line of the top of the said upper seat, so as to overlap the edge of the opening through which the lower part of the spindle is inserted. The upper valve, B, is held down to its seat by a spiral spring, I, coiled around the spindle, the top of the spring bearing against the bottom of the nut G. The lower valve is held down to its seat by the spiral spring J, coiled around that portion of the

spindle which is contained in the lower valve-chamber, the top of the spring bearing against the top of that chamber.

The simplicity and economy of this improvement will be obvious to those skilled in the art. One of its advantages is the facility with which the spindle can be inserted and secured in place and removed. Another advantage is the security provided by it against the working loose of the spindle and against its becoming broken at the places where it is jointed to the valve-seats.

The valve-seats are cast into their proper places in the pump, being cast around projections C', which serve to interlock and hold the seats in place.

It will be observed that the shoulder E of the spindle or valve-stem closes the joint when the spindle goes through the upper valve-seat,

and consequently prevents the return of the water through that joint to the chamber below.

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

1. The guide-rod D, resting in a socket, F, in the seat of one valve, and extending through the seat of the other valve, and operating in combination with the valves B B, substantially as set forth.

2. The projection H on the inner surface of the lock-nut G, in combination with the case A, guide-rod D, valves B B, and valve-seats C C, substantially as and for the purpose described.

A. S. CAMERON.

Witnesses:

J. VAN SANTVOORD,
GUSTAV BERG.