

No. 753,755.

PATENTED MAR. 1, 1904.

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VALVE.

APPLICATION FILED JULY 10, 1903.

NO MODEL.

Fig. 2.

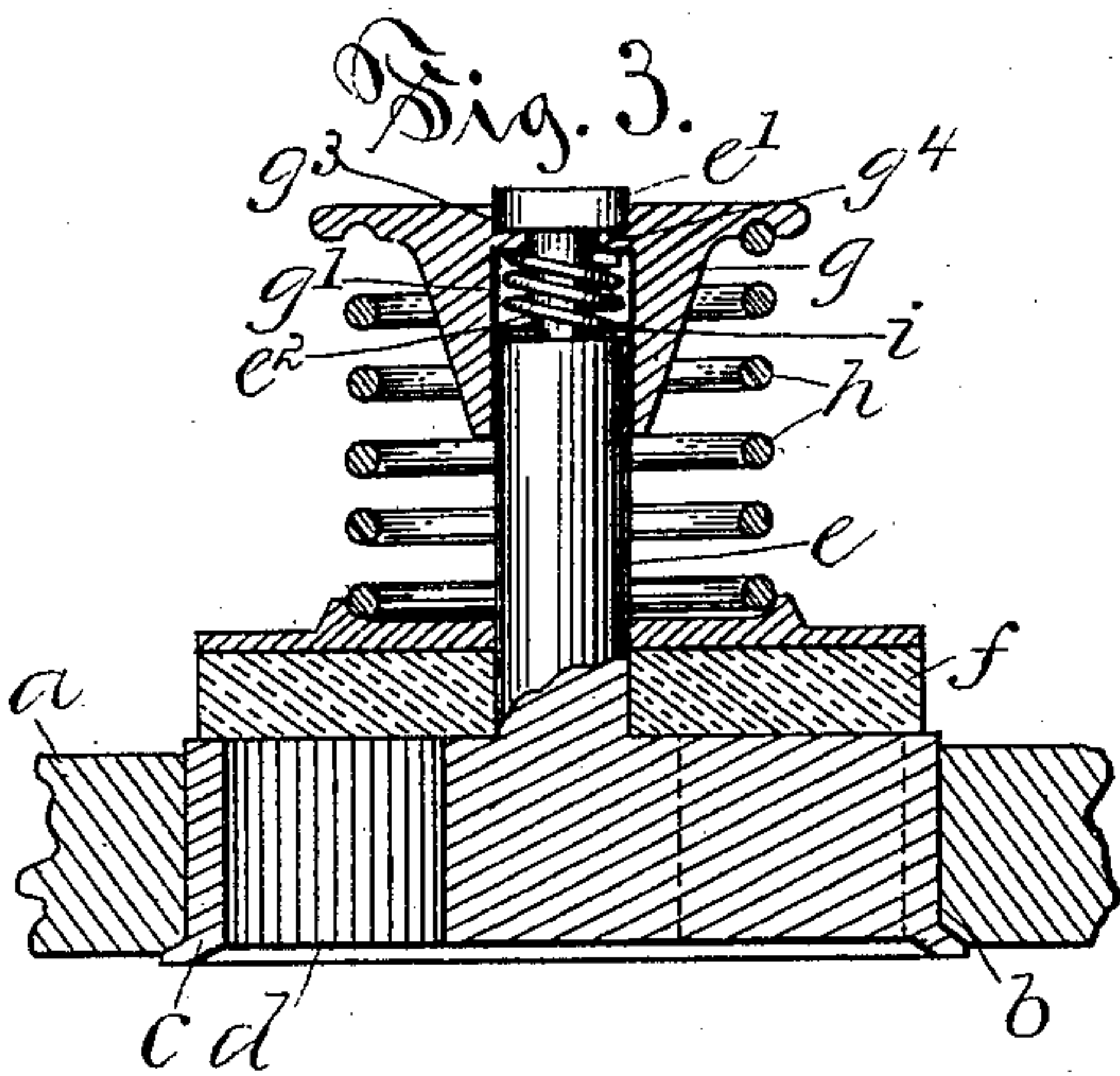
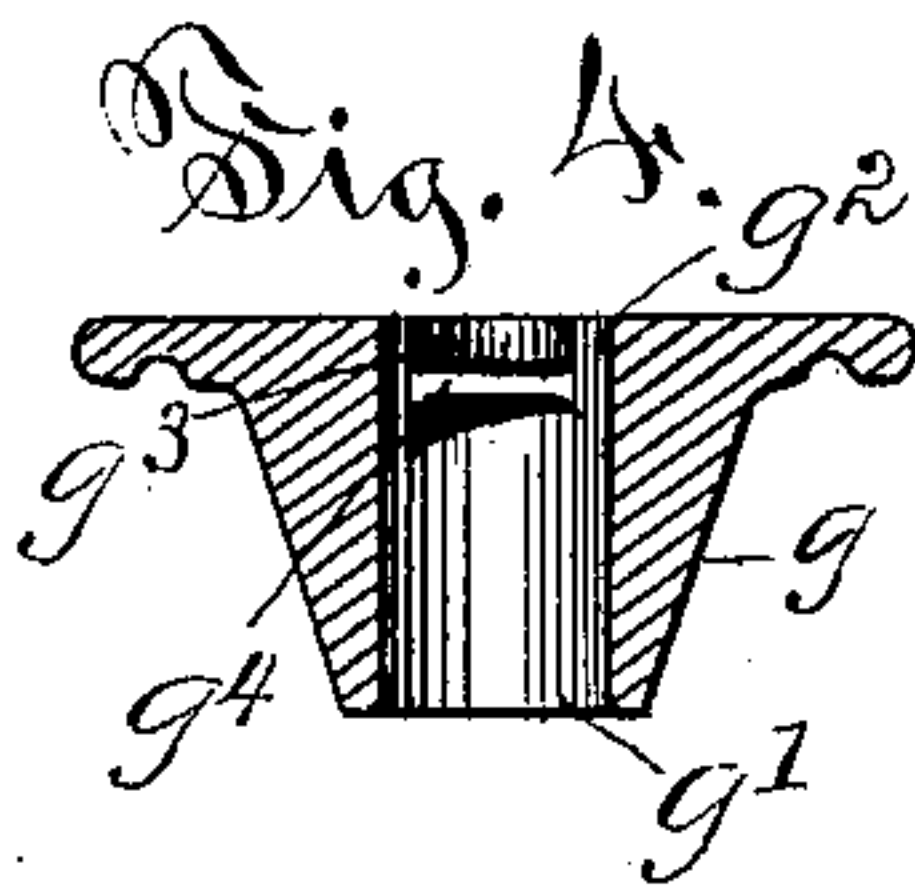
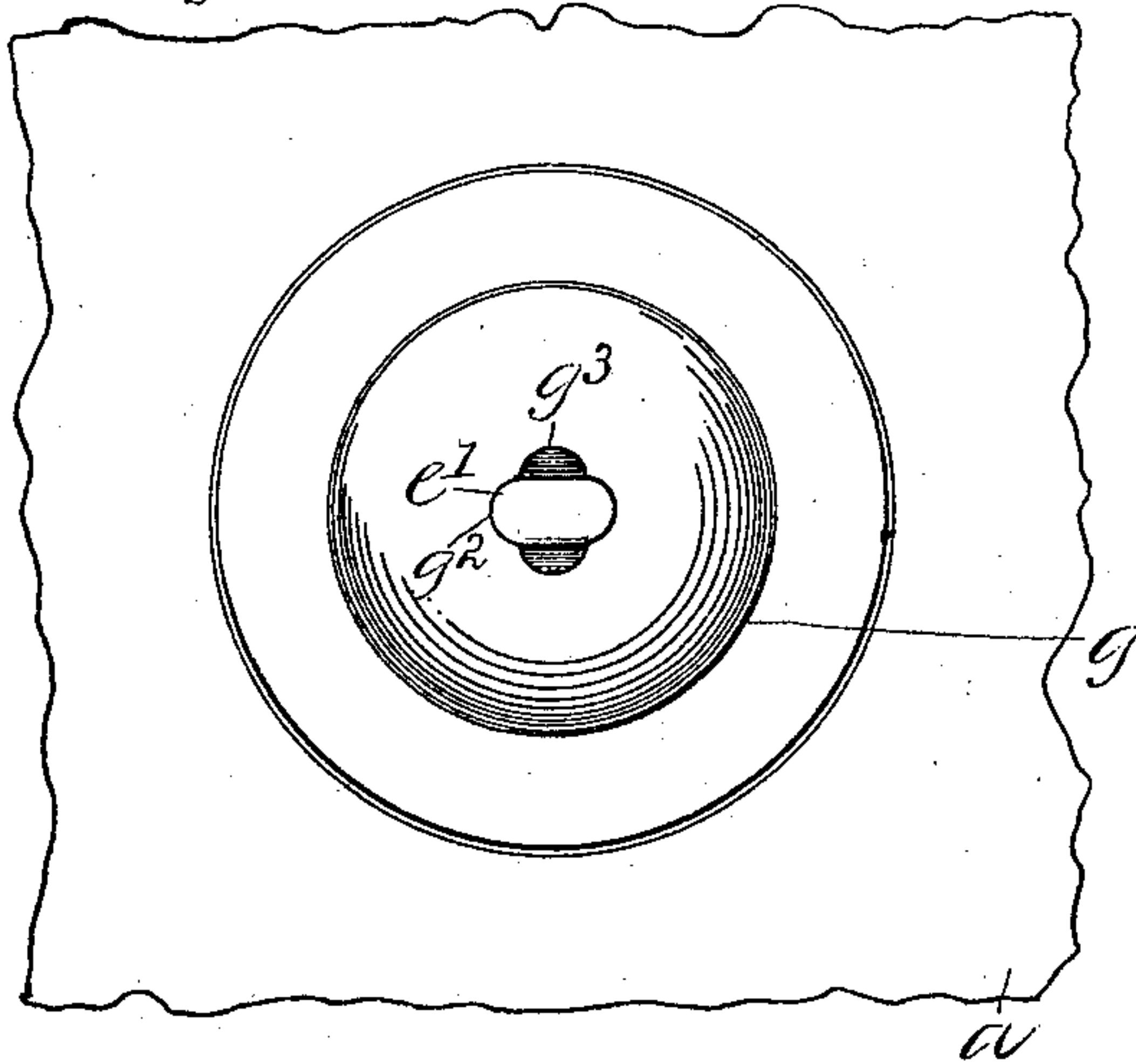
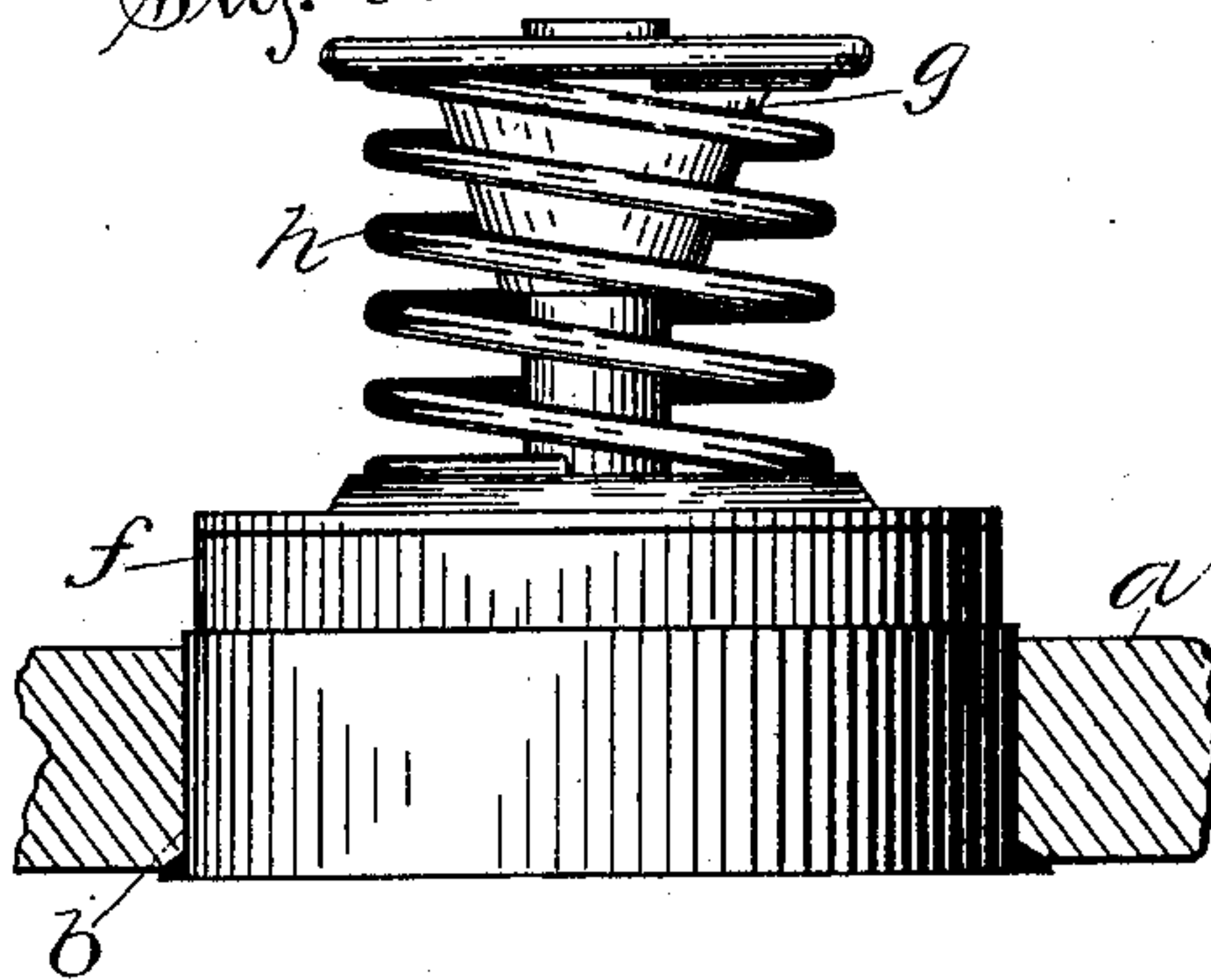


Fig. 1.



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# UNITED STATES PATENT OFFICE.

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## VALVE.

SPECIFICATION forming part of Letters Patent No. 753,755, dated March 1, 1904.

Application filed July 10, 1903. Serial No. 164,980. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. STRATTON, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Valves, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

My invention relates more especially to that class of devices used in the valve-deck of a fire-pump; and the object of my invention is to provide a device of this class that shall surely retain the valve against displacement in the event of breakage of any of the parts.

Referring to the drawings, Figure 1 is a view in side elevation of a portion of the valve-deck of a pump, showing my improved valve in place thereon. Fig. 2 is a top view with the lock in position to be removed from the spindle. Fig. 3 is a view in vertical section of the parts shown in Fig. 1. Fig. 4 is a view in central section through the lock in a plane at right angles to the plane of view of Fig. 3.

In the accompanying drawings the letter *a* denotes the valve-deck of a fire-pump through which the flow of water or other fluid is to be controlled. This deck is provided with any suitable number of openings *b*, in which a spider *c* is secured. This spider has a suitable number of openings *d*, and a stem *e* projects upward from the central portion of the spider.

The valve *f* is arranged to overlie and close the openings through the spider, the valve being constructed of any suitable material.

A lock *g* is located on the stem *e*, which is provided with lugs *e'*. This lock has a central opening *g'*, through which the stem *e* extends, the parts being arranged so that the lock may be turned on the stem. Slots *g<sup>2</sup>* extend from the central opening *g'*, preferably on diametrically opposite sides, these slots being of a size to admit the lugs *e'*. The slots extend entirely through the lock *g*. Locking-recesses *g<sup>3</sup>* also extend from the central opening and are also, preferably, located on diametrically opposite sides of said opening. These recesses extend only partially through the lock and are of a size to admit the

lugs *e'*. The opening *g'* is contracted near its outer end, and the recesses *g<sup>3</sup>* are so formed with respect to this opening as to provide lips *g<sup>4</sup>*, these lips forming the bottom of the recesses *g<sup>3</sup>*.

A mainspring *h* is located between the under side of the lock *g* and the valve *f* and serves to press the latter tightly against its seat, but allows it to rise under the pressure of the fluid from beneath.

Many of the details of the construction above described will be found illustrated in my pending application, filed February 3, 1902, of Serial No. 92,289, and reference is hereby made to said application for an illustration of the manner of use of a device of this class.

The spindle *e* is reduced, as at *e<sup>2</sup>*, and a guard-spring *i* is located between the shoulder at the lower part of this reduced portion and the lugs *e'*. This spring is so constructed (preferably spirally) that the upper end will rest against some portion of the lock. In the preferred form and as shown herein the spring rests against the lips *g<sup>4</sup>*. This guard-spring is placed under very little tension—in fact, just enough to hold the lock in its place should the mainspring become broken. It will be readily seen that in the operation of the valve no strain or tension whatever is placed upon this guard-spring, but that it remains normally and at all times under but very little tension. This is an important feature of my invention, as it will be seen that should the mainspring break the lock will be held by the guard-spring, so that the lugs *e'* will constantly engage the locking-recesses *g<sup>3</sup>*, and the strain on the guard-spring being so slight its life will practically be perpetual. The retaining of the lugs in the locking-recesses prevents any turning movement of the lock, except when it is desired to remove it, and all the parts are thereby surely retained in place and cannot escape from their positions to the detriment and damage of the pump should any of the valve parts become broken.

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

1. In a fluid-controlling device, a seat for a



- valve, a valve located on the seat, a mainspring for holding the valve to its seat, a lock for holding said spring, and a guard-spring appurtenant to said lock.
- 5 2. In a fluid-controlling device, in combination with a valve-seat, a valve, a spring for holding the valve to its seat, a stem extending through the valve, a lock located on the stem to hold said spring, and a guard-spring appurtenant to said lock.
- 10 3. In combination with a valve-deck having openings therethrough, a valve mounted on the surface of said deck, a stem to secure it to the deck and extending through the valve, a spring for holding the valve to its seat, a lock in engagement with the stem for holding said spring, and a guard-spring appurtenant to said lock.
- 15 4. In combination in a fluid-controlling device, a valve-seat, a valve, a spring for holding said valve to its seat, a stem extending through the valve, a lock on the stem, said lock and stem having interengaging lugs and recesses, and a guard-spring appurtenant to said lock.
- 20 5. In a fluid-controlling device having a valve-seat, a valve, a stem extending through the valve and having locking-lugs, a spring to hold the valve to its seat, a lock having slots for the passage of lugs on the stem and locking-recesses for their reception, and a guard-spring appurtenant to said lock.
- 25 6. In a fluid-controlling device including a valve-seat, a valve, a stem extending through the valve and having a reduced portion forming shoulders and provided with locking-lugs, a spring to hold the valve to its seat, a lock located on the stem and having slots and locking-recesses for said lugs, and a guard-spring with one end located on said shoulder
- 30 and the opposite end pressing against the lock.
- 35 40

7. In a fluid-controlling device including a valve-seat, a valve, a spring to hold the valve to its seat, a stem extending through the valve, a lock located on the stem, said lock and said stem having interengaging lugs and recesses, and normally inactive means for holding the lugs and recesses in engagement. 45

8. In a fluid-controlling device including a valve-seat, a valve, a stem extending through the valve and having projections extending therefrom, a spring for the valve, a lock having an opening with lips located therein and locking-recesses, and a guard-spring located on the stem with one end in engagement with said lips. 50 55

9. In combination with valve-deck having openings therethrough, a stem extending from said deck and having lugs, a valve located on the stem to control the openings through the deck, a spring for holding the valve to its seat, a lock located on the stem and having a central opening and locking-recesses forming lips for the reception of the lugs, and a guard-spring with one end pressing against said lips. 60

10. In combination with a valve-deck having openings therethrough, a stem projecting from said deck and having a reduced portion forming locking-lugs, a valve located on the stem to control the flow of fluid through the openings through the deck, a mainspring for the valve, a lock having a central opening with lips located therein and locking-recesses for the reception of said lugs, and a guard-spring located within said opening and with one end resting against said lips. 65 70

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