

(No Model.)

J. S. LENG.
Valve.

No. 236,342.

Patented Jan. 4, 1881.

Fig 1.

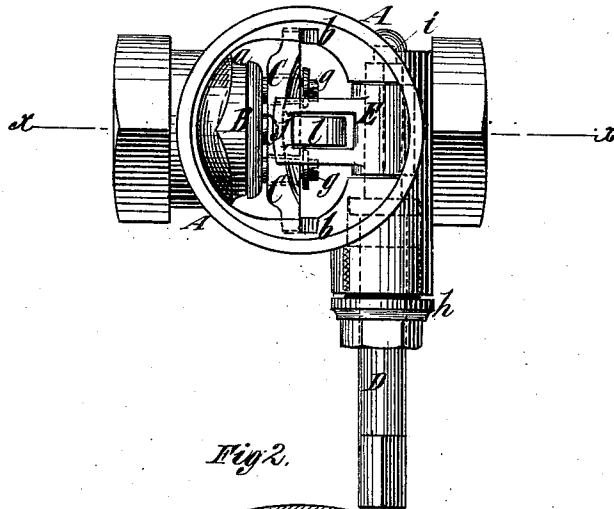


Fig 2.

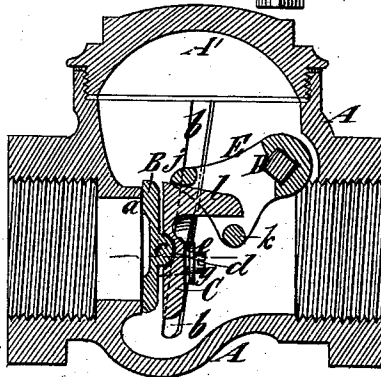
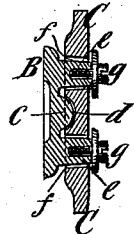


Fig 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN S. LENG, OF WEST BRIGHTON, NEW YORK.

VALVE.

SPECIFICATION forming part of Letters Patent No. 236,342, dated January 4, 1881.

Application filed October 16, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. LENG, of West Brighton, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Valves, of which the following is a specification.

My invention relates to what are known as "straightway" or "gate" valves, in which the valve is opened by moving or sliding it transversely to the passage through the valve-shell; and the object is to construct such a valve so that it is free to adjust itself to its seat independently of the devices which move it to open or close it.

To this end my invention consists in the combination, with a valve-shell, of a sliding carriage and valve connected with said carriage, so as to provide for its adjustment to its seat in all directions independently of said carriage, as more fully hereinafter described.

It also consists in the combination, with a valve-shell constructed with guides, of a sliding carriage and mechanism connected with said carriage for moving it along said guides, and a valve attached to said carriage so as to be moved therewith in opening or closing, but so that it may adjust itself to its seat independently of said carriage. The mechanism for moving said carriage preferably consists of a rock-shaft extending across the shell and having a connection with said carriage, so that it may be moved by turning the rock-shaft.

The invention also consists in a novel manner of connecting the valve with its movable carriage so that the former may be capable of adjusting itself in all directions to its seat without hinderance from its connection with said carriage, thus possessing all the advantages of a globe-valve, with the additional advantage of affording a straight passage through the shell, as in a gate-valve.

In the accompanying drawings, Figure 1 represents a plan of a valve embodying my invention, with the cap or bonnet removed. Fig. 2 represents a central longitudinal section upon the dotted line *x x*, Fig. 1; and Fig. 3 represents a horizontal section of the carriage and valve, showing the manner of connecting the latter to the former.

Similar letters of reference designate corresponding parts in all the figures.

A designates the shell of the valve, which is provided at opposite ends with internal screw-threads for the attachment of pipes, and constructed with a straight water way or passage and a seat, *a*. The shell is provided with a removable cap or bonnet, *A'*, to afford provision for inserting the various parts in the shell.

B designates a valve, consisting of a disk fitted to the valve seat *a*; and C designates a sliding carriage, with which said valve is connected in a manner fully hereinafter described. The shell A is constructed with inclined grooves *b* in opposite sides, and these grooves form guides for the carriage C, the edges of which enter them.

Referring to the connection between the valve B and its carriage C, I would remark that the said connection must be of such a nature that while the valve is always moved to open or close by the movement of the carriage, it is free in all other respects, and is capable of adjusting its face in all directions to conform to the valve-seat independently of said carriage.

One of the parts B and C in this example of my invention—the valve B—is provided with a convex or rounded teat or protuberance, *c*, and the other part—in this instance the carriage C—is constructed with a recess, *d*, forming a seat for said protuberance or teat *c*, and by reason of this teat or protuberance the valve is free to adjust itself to conform to its seat without a corresponding adjustment of the carriage.

In order to still further connect the valve B to its carriage C, I construct said valve with guard-studs *e*, fitting loosely into holes *f* in the carriage; and at the back of these studs are screws and washers *g*, to prevent the accidental detachment of the valve B from its carriage. In its downward movement the carriage C is, by reason of the inclined guides *b*, moved toward the seat *a*, thus pressing the valve tightly upon the seat, and when the carriage is moved in the opposite direction the pressure of the carriage is taken off the valve, and hence the latter is not worn unevenly by friction in opening.

A screw or other convenient means may be connected with the carriage C for moving it;

but I preferably employ a rock-shaft, D, extending across the shell A and having a bearing in a stuffing-box, *h*, at one side of the shell, and in a recess, *i*, upon the opposite side of said shell. The portion of the rock-shaft within the shell A is preferably square, and E designates a cam having a square hole fitting upon said rock-shaft. The cam E is constructed with bars or abutments *j k*, between which projects an arm, *l*, upon the carriage C.

By rocking or turning the shaft D the bars *j* and *k* act alternately upon opposite sides of the arm *l*, and hence serve to move the carriage and valve to open and close the latter.

By my invention I provide a valve which, in addition to having a straight water way or passage, has all the advantages of a globe-valve, in that it may adjust itself to accommodate itself to the seat independently of the mechanism which moves said valve.

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

1. The combination, with the valve-shell, of the sliding carriage and the valve connected with the carriage, so as to provide for its self-adjustment in all directions to its seat independently of said carriage, substantially as specified.

2. The combination, with a valve-shell constructed with guides, of a sliding carriage fitting said guides, mechanism connected with said carriage for moving it along said guides, and a valve connected with said carriage so as to be moved therewith and thereby in opening and closing, but so that it may adjust itself to its seat independently of said carriage and

also independently of said guides, substantially as specified.

3. The combination, with a valve-shell constructed with guides, of a sliding carriage, a rock-shaft separate from said carriage arranged within the valve-shell and connected to said carriage so as to move the same along said guides, and a valve connected to said carriage so as to be moved therewith in opening and closing, but so that it may adjust itself to its seat in all directions independently of said carriage, substantially as specified.

4. The combination of the sliding carriage and the valve, one of said parts being provided with a teat or protuberance and the other with a corresponding recess or depression, and operating mechanism connected with said carriage but unconnected with said valve whereby provision is afforded for the self-adjustment of said valve to its seat independently of said carriage, substantially as specified.

5. The combination of the sliding carriage and the independent valve, the one having the teat or protuberance *e*, and the other the recess or depression *d*, and the one having studs *e*, and the other holes *f* for the reception of said studs, whereby provision is afforded for the adjustment of the valve to its seat in all directions independently of said carriage, substantially as specified.

JOHN S. LENG.

Witnesses:

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