(No Model.)

# G. B. HAINES.

## LOCKING VALVE.

No. 462,639. Patented Nov. 3, 1891.

Fig. 1.

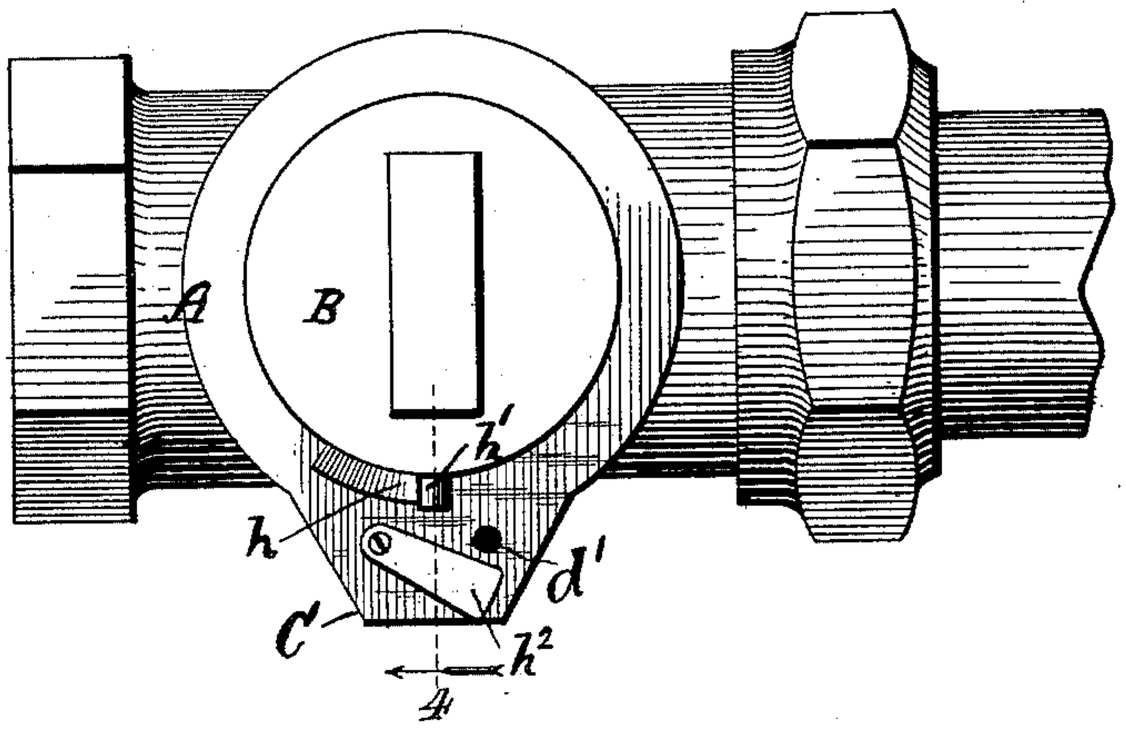
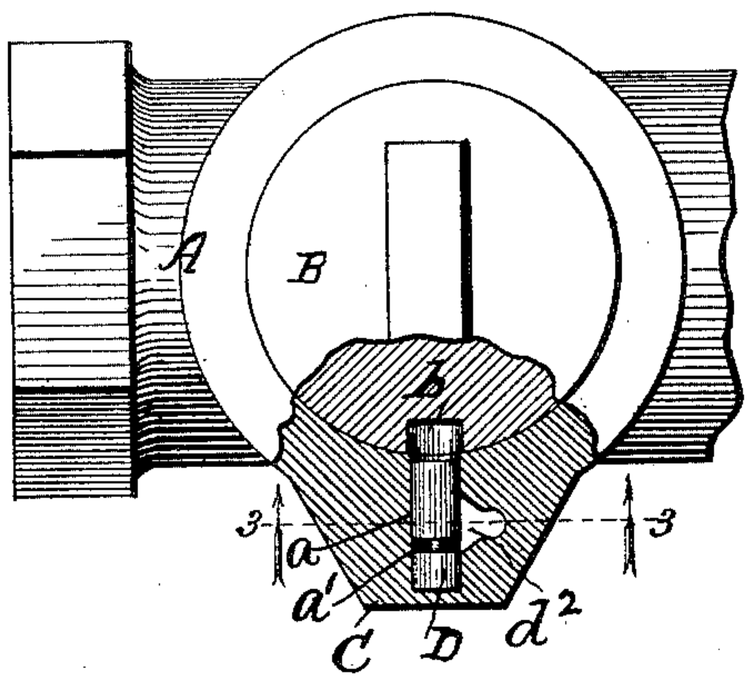



Fig. 2.

Fig. 3.



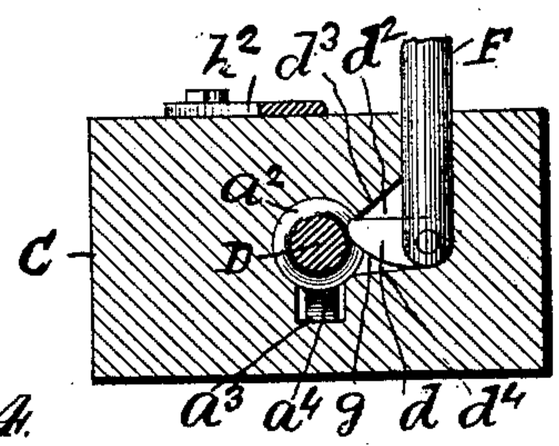
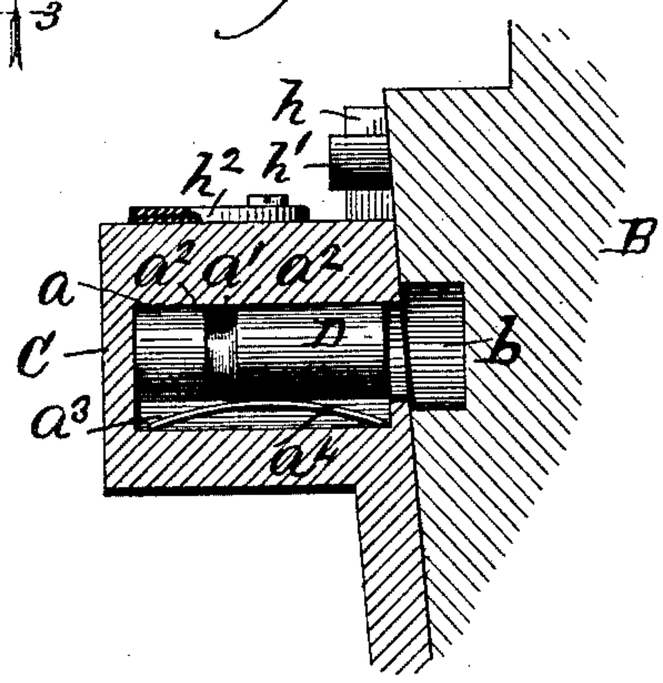




Fig. 4.

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# UNITED STATES PATENT OFFICE.

GEORGE B. HAINES, OF CHICAGO, ILLINOIS.

## LOCKING-VALVE.

SPECIFICATION forming part of Letters Patent No. 462,639, dated November 3, 1891.

Application filed October 27, 1888. Serial No. 289,300. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE B. HAINES, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Locks for Shut-Off Valves, of which the following is a full, clear, and exact description, that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

The object of this invention is to provide an improved means for locking the ordinary shut-off valve or stop-cock for the purpose of preventing the taper plug from being rotated in its seat unless first unlocked by the use of a proper key.

Figure 1 is a plan embodying my improved features; Fig. 2, a similar view with a part of the plug-valve and inclosing shell broken away, exposing the locking-bolt and relative position of the same; Fig. 3, a vertical enlarged section in plane 3, Fig. 2; and Fig. 4, a vertical broken-away transverse section in plane 4, Fig. 1.

Referring to the drawings, A represents the shell or valve-chamber in which the taper-plug valve B is seated and rotates. The valve-chamber is provided on one side with the projection C, having the aperture or recess $a$ starting from the inner side and stopping short therein, as shown in Figs. 2 and 4. The horizontal locking-bolt D is inserted or seated in the recess $a$, and is provided with the annular groove $a'$, forming a shoulder $a^2$ on either side. Opening downwardly from the recess $a$ and from the under side of the bolt is the smaller or sub recess $a^3$, (see Fig. 3,) in which is seated the spring $a^4$, bearing against the locking-bolt with just sufficient tension to prevent the bolt from being shifted in either direction by tapping on the outside of the valve, but at the same time permitting a free movement of the bolt by the use of the proper key. It is obvious that the locking-bolt might be made to have a close fit in its chamber and the spring be dispensed with, the spring being used as a precaution against tampering or jarring. The locking-bolt is in one piece, and is wholly withdrawn from the plug-valve when unlocked, being seated normally in the recessed projection.

The taper plug B is provided with the recess $b$, (see Figs. 2 and 4,) which registers with the bolt-recess in the inclosing shell when the valve is in a closed position. The recess in the plug is somewhat larger than the companion recess in the shell, thus preventing the end of the bolt from meeting any obstruction from overprojecting edges of the adjacent surfaces.

The key F for manipulating the locking-bolt has the bit $d$ pivoted or hinged to the end of the same, as shown in Fig. 3, so that the bit may lie in a plane parallel with the shank of the key or be turned at right angles thereto. The aperture $d'$, starting in from the upper side of the chambered projection C, provides the required key-hole. This aperture is enlarged on the inside (see Fig. 3) to form the chamber $d^2$, which opens into the bolt-recess. The top and bottom of the key-chamber $d^2$ present inclined surfaces $d^3$ $d^4$. The key is inserted with the bit parallel to the shank. The rounded edge $g$, coming in contact with the inclined bottom of the key-hole, turns the bit up to the position shown in Fig. 3 and into engagement with the annular groove $a'$ in the locking-bolt. The bolt may now be thrown into either position, in accordance with the direction in which the key is turned. When the key is withdrawn, the upper edge of the bit comes in contact with the inclined top of the key-chamber and is thrown back parallel to the shank or stock, when the key may be readily withdrawn through the contracted opening $d'$.

Any number of bolts may be used should it become necessary to complicate the locking mechanism.

The lug $h$, formed on the shell, and the stop-pin $h'$, projecting from the plug, when in contact, indicate that the valve is closed and in position to be locked.

The pivoted cap $h^2$ is intended to cover the key-hole for the purpose of excluding dust and dirt.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In a valve-lock, the combination, with the inclosing shell having a key-hole entering downward from the top and enlarged on the inner side to form a chamber, said chamber having an inclined top and bottom, as described, of a locking-bolt recessed in the inclosing shell and provided with an annular groove, and a key provided with an adjustable bit, which lies parallel with the shank when entering the key-hole, but is turned at right angles and thrown into engagement with the locking-bolt by contact with the bottom, whereby said bolt may be thrown into and out of a locking position, substantially as and for the purpose set forth.

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