(No Model.)

J. CLARK.

SAFETY GAS COCK.

No. 473,611. Patented Apr. 26, 1892.

Fig. 1.

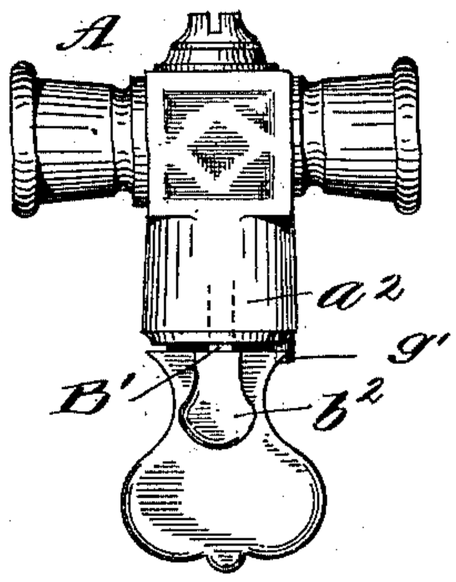


Fig. 2.

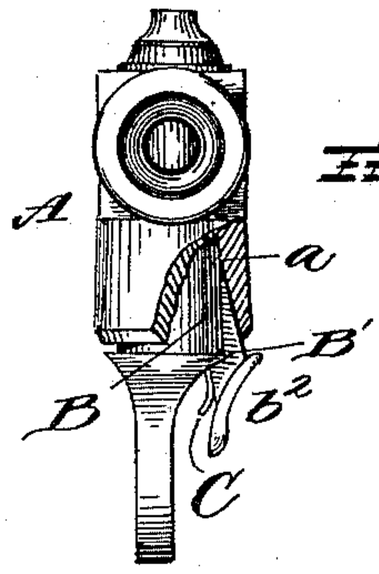


Fig. 7.

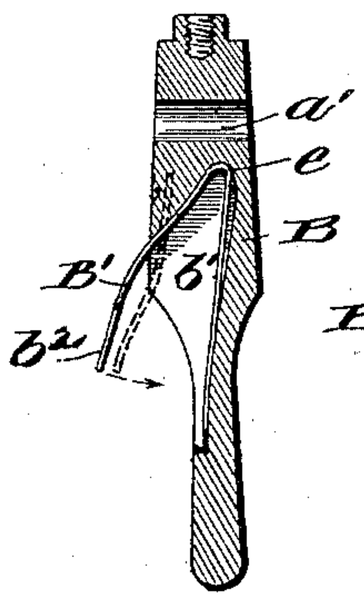


Fig. 3.

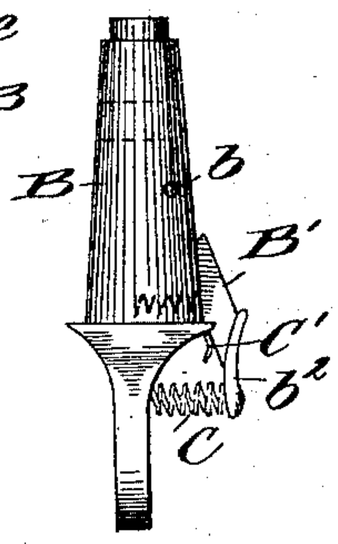


Fig. 4.

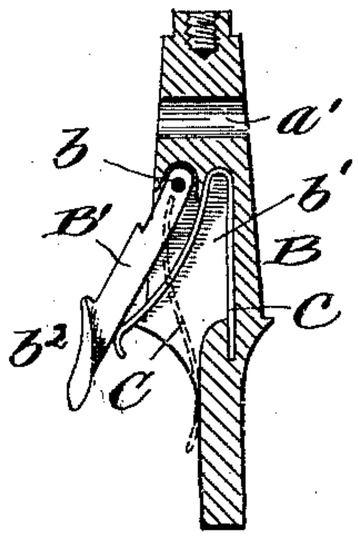


Fig. 5.

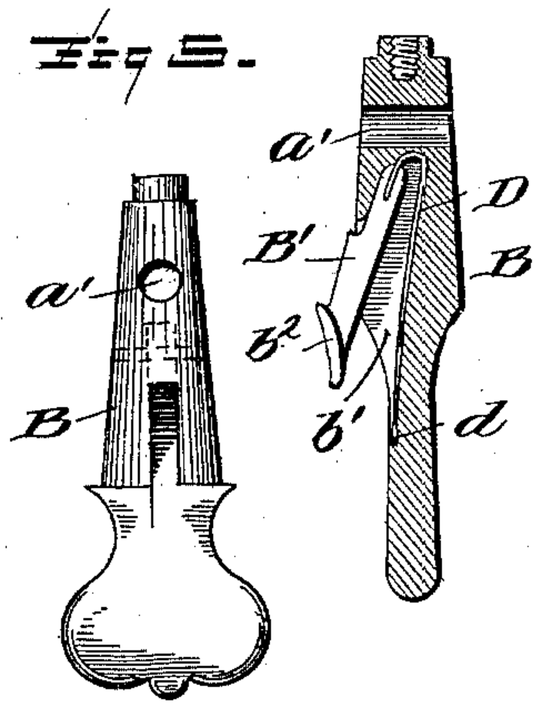
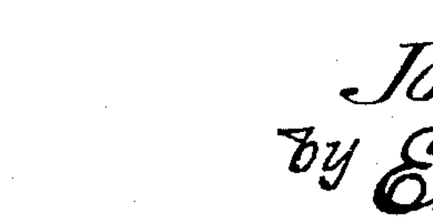


Fig. 6.



Witnesses.

F. Hollaniteverde.

L. C. Hills.

Inventor.

Joseph Clark.

by E. B. Stocking

Atty.

UNITED STATES PATENT OFFICE.

JOSEPH CLARK, OF SAN FRANCISCO, CALIFORNIA.

SAFETY GAS-COCK.

SPECIFICATION forming part of Letters Patent No. 473,611, dated April 26, 1892.

Application filed November 24, 1891. Serial No. 412,936. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH CLARK, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Safety Gas-Cocks, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in safety gas-cocks of that class in which provision is made for the automatic locking of the cock when turned to shut off the flow of gas, so as to provide against accidental carrying of the key beyond its line of center in either direction and consequent escape of gas, thereby saving loss of life by asphyxiation.

The present invention has for its objects among others to provide an improved construction in which there is an actuated catch in contradistinction to a stop lug and pin, which shall be movable from the body of the cock-plug toward the body of the cock and engage the inner wall thereof. The catch is preferably spring-actuated, and the parts are so arranged as to be readily assembled, not liable to derangement, and positive in their action. When the cock is turned, the catch is sure to operate at the proper time, and the cock cannot be turned until the catch has been disengaged, which cannot be done accidentally, the parts being arranged so that the catch, engaging the inner wall, guards against accidental moving of the same.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, in which—

Figure 1 is a side elevation of my improvement. Fig. 2 is a view at right angles to Fig. 1 with a portion broken away. Fig. 3 is a detail view of the turn key or plug detached. Fig. 4 is a longitudinal section of the same, showing a modification. Fig. 5 is a view of the turn key or plug with the catch removed. Fig. 6 is a bottom plan with the key or plug removed, showing the notch or groove in the wall of the body of the cock. Fig. 7 is a longitudinal section of a turn key or plug with a modified form of catch. Fig. 8 is a similar view of still another form.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the ordinary cock, which is provided with the opening *a*, within which the turn key or plug is adapted to be rotatably held, the key or plug being provided with the passage-way *a'*, which when in one position permits the flow of gas and when in a position at right angles to the first-mentioned position shuts off the flow of gas.

The body A of the cock is of known or any approved form of construction, except that the wall of the opening *a* is provided with a longitudinally-disposed groove or opening a^2, as seen best in Fig. 6, which opening or groove should correspond to the form of catch employed, and may be tapered, as seen in Fig. 2, or otherwise, as may be found most expedient.

The turn key or plug B is provided with a catch, which in its various modifications is lettered B'. In Fig. 2 it is shown in position, and in section in Fig. 4. The catch is pivoted at its inner end, as at *b*, within a chamber *b'* within the plug, and is provided with a thumb-piece b^2 or other suitable means for aiding in its manipulation. It is normally held outward by the aid of a spring C, which may be of the form shown in full lines in Fig. 4, with one end held within the chamber—as, for instance, by being inserted in a kerf or slit therein, as shown—with the other end acting against the inner face of the catch near its free end, as shown; or the spring may be of the form shown in dotted lines in said Fig. 4, with the inner end seated in a notch or kerf in the inner face and end of the catch and the outer end unconfined and working upon the wall of the plug or key.

In Fig. 3 is shown a coiled spring acting upon the free end of the catch, with its other end bearing against the thumb-piece of the plug.

In Fig. 8 the catch is shown as unpivoted, it being held in place by the spring D, which

has one end held in a notch *d* in the plug and its other end held in a kerf or groove in the inner end of the catch.

In Fig. 7 is shown a modification wherein the spring and catch are formed of one and the same piece of spring material, the one end being held in a notch or groove in the plug and the other end serving as the catch and means for operating the same, the material being bent near its center, as shown at *e*, and seated in a correspondingly-shaped recess in the inner end of the chamber of the plug. Where necessary, the plug is formed with a groove or channel for the proper working of the catch. Such a groove is seen in Fig. 5, as shown at a^2.

The plug is held in the body of the cock in any preferred manner—as, for instance, by the usual nut and washer, as seen in Figs. 1 and 2, the smaller end of the plug having a screw-threaded opening, as seen in Figs. 4, 7, and 8, for the reception of the screw-threaded shank of the securing means.

In all of the forms shown the operation is substantially the same, the different constructions being illustrated to show how the invention may be embodied in practical forms without departing from the essential feature of the same.

In operation, as the plug must be turned to shut off the gas, when the said plug is turned the catch must engage in the groove or passage in the inner wall of the opening in the body of the cock, as seen in Fig. 2, and thus shut off the flow of gas. In order to turn on the gas, it is necessary to press upon the outer end or thumb-piece of the catch, so as to free the catch from the groove in the opening of the cock, and then the plug will be free to be turned. The catch acts automatically and positively, the plug cannot be turned past the determined point, nor can it be turned after the gas has been shut off without pressing on the outer end of the catch sufficiently to disengage the catch from the opening with which it engages, so that accidental turning of the plug farther than is necessary to turn off the gas is prevented.

The coiled spring may be arranged within the body of the plug, as shown in dotted lines in Fig. 3. Where the catch and spring are of one integral piece, instead of being of the form shown in full lines in Fig. 7, it may be of the form shown in Fig. 7 in dotted lines, the catch and spring being confined at one end in any suitable manner in the body of the plug, the outer end operating in substantially the same manner as the form shown in full lines.

I may sometimes provide a lug or lugs *g* on the end of the body of the cock, as seen in Fig. 6, against which a projecting part, as a lug *g'*, Fig. 1, on the plug will engage to serve as a supplemental stop to prevent the turning of the plug in the wrong direction to shut off the flow of gas.

Other modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as new is—

1. The combination, with the body and plug of a cock, of a catch carried by and moving at an angle to the thumb-piece of the plug and constructed and arranged to engage the inner wall of the opening in the body in which the plug works, as set forth.

2. The combination, with the body and plug of a cock, of a catch seated in a radial slot in the plug and yieldingly pressed outwardly from the plug to automatically engage a groove in the inner wall of the opening in the body in which the plug works, as set forth.

3. The combination, with the body and plug of a cock, of a catch mounted for diametrical movement in the plug and yieldingly pressed outward at an angle to the thumb-piece thereof to engage with a groove in the inner wall of the opening in the body in which the plug works, as set forth.

4. The combination, with the body and plug of a cock, of a catch seated in the plug and having an integral spring portion held at one end in the plug and with a bend providing for radial movement of the catch, as set forth.

5. The combination, with the body and plug of a cock, of a catch and of a spring having a bend at its inner end provided for an automatic radial movement of the catch, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH CLARK.

Witnesses:
E. H. BOND,
HEATH SUTHERLAND.