(No Model.)

J. CLARK.

SELF CLOSING SAFETY GAS COCK.

No. 552,704. Patented Jan. 7, 1896.

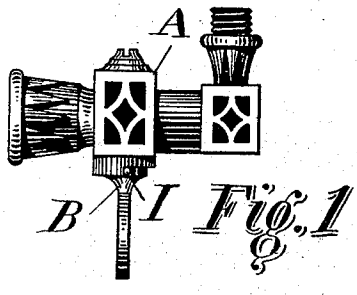

Fig. 1

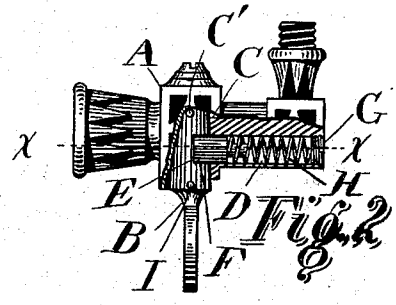

Fig. 2

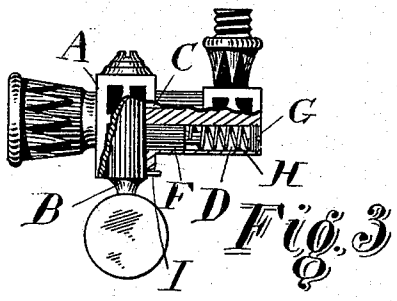

Fig. 3

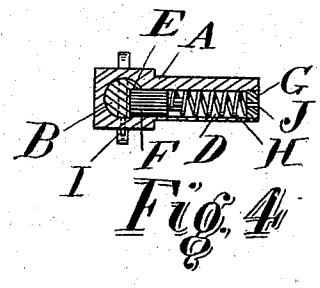

Fig. 4

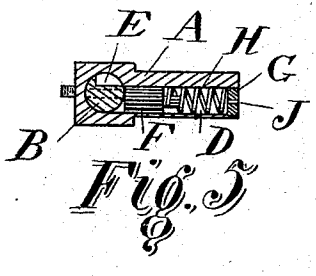

Fig. 5

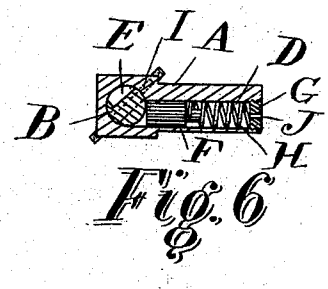

Fig. 6

Witnesses.
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UNITED STATES PATENT OFFICE.

JOSEPH CLARK, OF SAN FRANCISCO, CALIFORNIA.

SELF-CLOSING SAFETY GAS-COCK.

SPECIFICATION forming part of Letters Patent No. 552,704, dated January 7, 1896.

Application filed June 19, 1894. Serial No. 515,060. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH CLARK, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented a certain new and useful Self-Closing Safety Gas-Cock; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in gas-cocks, and more particularly to that class known in the art as "safety gas-cocks," wherein a resisting force, in addition to that resulting from the friction between the key or plug and the barrel of the cock, is directed to obviate the danger of the key being accidentally turned into a position to allow the escape of gas.

The prime objects of my invention are, first, to so position a bolt actuated by a coiled spring relative to the key or plug of the cock that its line of action is at right angles to the axis of revolution of the key, and by the employment of this novel construction and assemblage of parts the key or plug, as it is caused to revolve within a certain arc, preferably ninety degrees, or from a closed to an open position, compresses the spring, while the revolution of the key in the opposite direction within that arc is accomplished by the rebound of the spring, and, second, to accomplish this end with structural simplicity and economy.

The novelty resides in the peculiarities of construction and the combinations, arrangements and adaptation of parts, all as more fully hereinafter described, and particularly pointed out in the appended claims.

The drawings hereto annexed and constituting a part of this specification clearly illustrate the operation and advantages of the invention, and the similar letters of reference marked thereon designate corresponding parts throughout the several views.

Figure 1 is a side elevation of a gas-cock embodying my invention. Fig. 2 is a similar view with a portion of the side wall broken away, showing the relative position of the parts of my invention, the plug or key being represented in a closed position. Fig. 3 is a similar view to that shown in Fig. 2, with the exception that the plug is represented in an open position. Fig. 4 is a partial section of the cock, taken through the line $x\,x$, Fig. 2. Fig. 5 is a similar view to that shown in Fig. 4, the key being represented in a full-open position, and Fig. 6 is a section showing the relative position of the parts as the key assumes a partly-open position.

I will now explain in detail the construction and operation of my invention, reference being had to the above figures.

The main body A of my improved gas-cock is so formed as to resemble in outward appearance any style or shape of cock now commonly manufactured, and is similar in construction so far as the position and rotary connection of the plug or key B with the body or barrel A of the cock is concerned.

Situated directly beneath the passage-way C is the longitudinal chamber D, whose line of direction is perpendicular to the axis of revolution of the plug B. Formed in the plug B and at a suitable distance below the passage-way C′, and, as the plug B assumes a closed position, directly in a line with the line of direction of the chamber D, is the countersunk or cut-away recess E into which is adapted to enter one extremity of the cylindrical bolt or plunger F. At the opposite extremity of the chamber D from that in which the plunger F is adapted to reciprocate is the screw-plug G, between which and the plunger F is placed the coiled spring H.

The function of the spring H and plunger F and their action on the key or plug B as the latter is revolved is readily seen from Figs. 4, 5 and 6, in which is shown in dotted lines the position of the passage-way C′. As the plug B is revolved from the position shown in Fig. 4 to that shown in Fig. 5, or from a closed to an open position, the plunger F, being situated to one side of a line through the center of the plug, is caused to enter the chamber D until the outer edge of the depression E, which acts as a cam, passes the inner extremity of the plunger F. When it is desired to reduce but not completely shut off the flow of gas, the key B is further revolved until it assumes the position shown in Fig. 6, and is prevented from revolving further in that direction by a stop-lug and pin I. It is mani-

fest that as the edge of the depression E reaches the extremity of the plunger F the force of the compressed spring H acting on the plunger F forces it outward, and in its course consequently causes the key B to revolve until it reaches a closed position, as shown in Fig. 4. It is further manifest that the action of the plunger F and spring H will prevent the key B from assuming any set position in the arc of ninety degrees between the limits shown in Figs. 4 and 5.

To guard against the liability of the air between the plunger F and cap G being compressed and consequently retarding the free reciprocation of the former, I have constructed the cap G with the perforation J.

By the employment of the improved construction and assemblage of parts as herein shown and described, the liability of accidentally allowing the cock to remain in a partly-open position after the light has been extinguished, and the danger of asphyxiation resulting therefrom is entirely obviated without necessitating the objectionable task of manipulating springs or other catches.

I am perfectly aware that various changes in the relative position and proportion of parts of the devices herein shown and described as an embodiment of my invention can be made in adapting the essential parts to conform with any cock of known or improved form of construction without departing from the spirit of my invention or sacrificing the advantages thereof, and I therefore reserve the right to make such changes and alterations as fairly fall within the scope of my invention.

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

1. The combination with the body and plug of a cock, of a coiled spring carried by the body, and operating in a line intersecting the plug without its axis of revolution and a plunger seated in the body and interposed between said spring and said plug, and a cavity in the plug for the automatic engagement of said plunger, and means for limiting the degree of revolution of said plug for the purpose set forth.

2. The combination with the body and plug of a cock, of a plunger seated in a longitudinal chamber in the body and operating in a line intersecting the plug without its axis of revolution and a cavity in the plug for the automatic engagement of said plunger as set forth.

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

JOSEPH CLARK.

Witnesses:
LEE D. CRAIG,
A. G. COOMBS.