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GEORGE E. SMITH.

Improvement in Gas Burners.

No. 119,478. Patented Oct. 3, 1871.

Fig: 1.

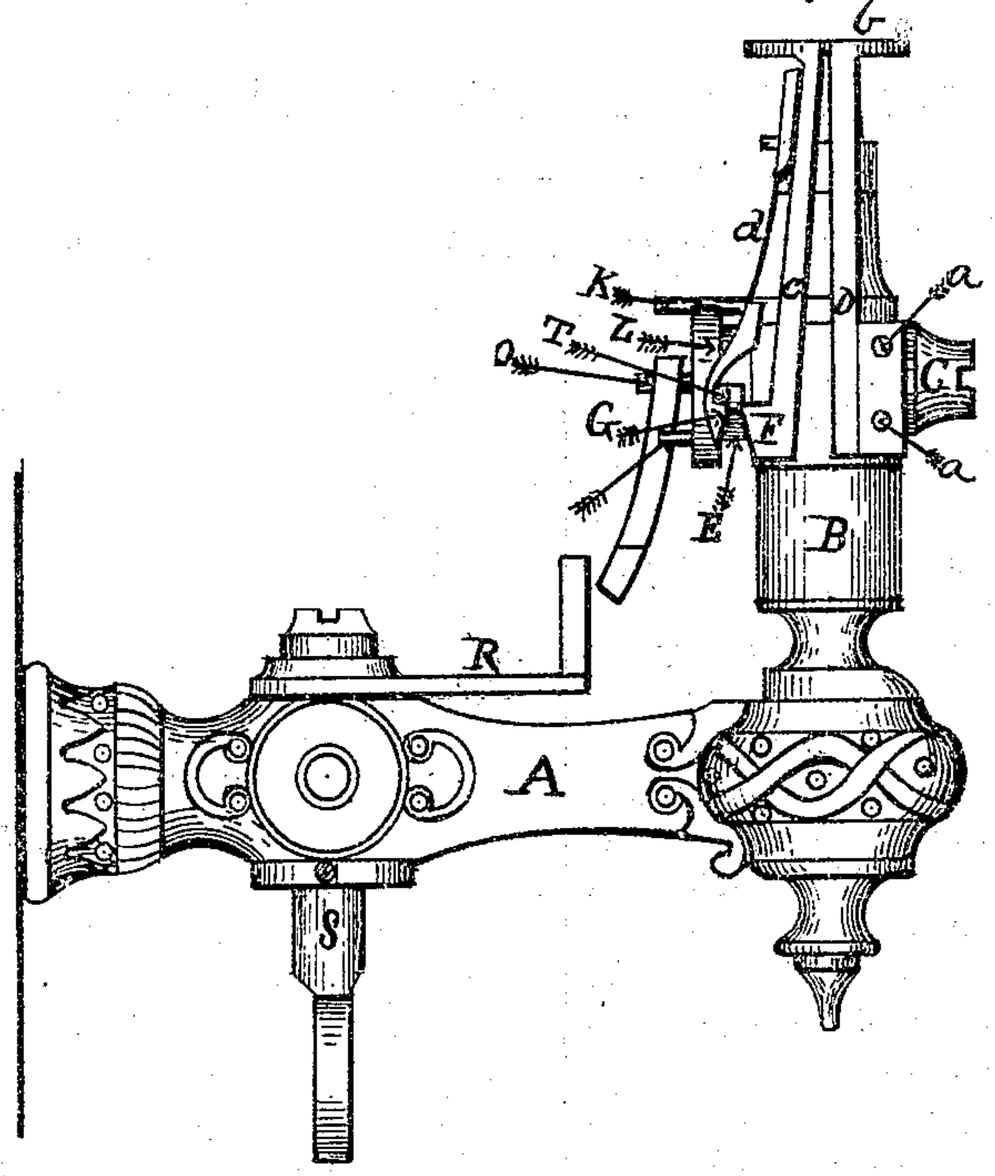


Fig: 2.

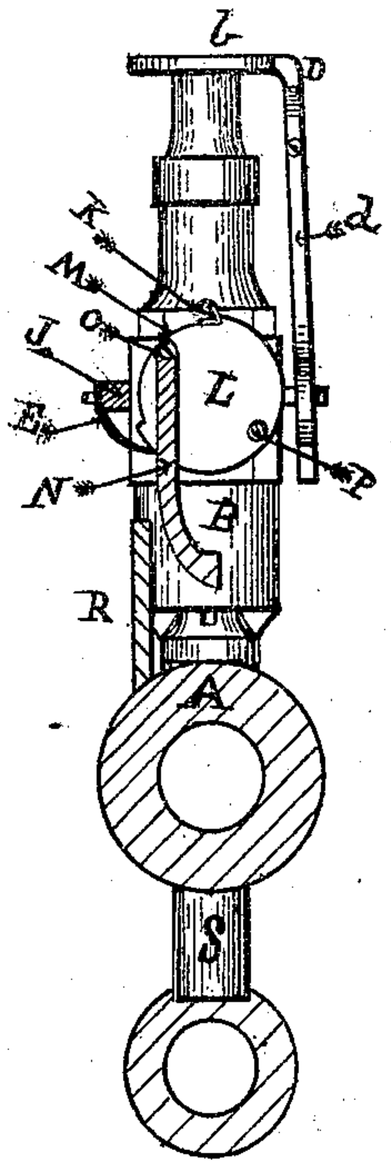
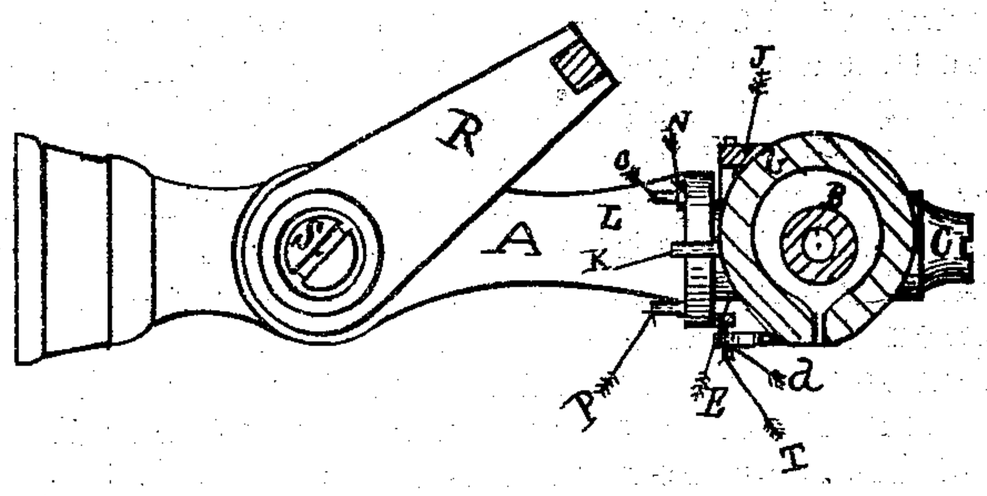


Fig: 3.



Witnesses.

Franklin Darrett.
Richard Gerner.

Inventor.

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per Henry Gerner
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UNITED STATES PATENT OFFICE.

GEORGE E. SMITH, OF NEW YORK, N. Y.

IMPROVEMENT IN SELF-CLOSING GAS-BURNERS.

Specification forming part of Letters Patent No. 119,478, dated October 3, 1871.

To all whom it may concern:

Be it known that I, GEORGE E. SMITH, of the city of New York, State of New York, have invented certain Improvements in Self-Closing Gas-Burners, of which the following is the specification:

My invention relates to a device for an automatic shutting of an extra gas-cock affixed to a gas-burner, when the gas is by accident or by ignorance extinguished without closing the main gas-cock. I am the inventor of an improvement in automatic gas-cocks for gas-burners, for which Letters Patent No. 84,914 were granted to me under date of December 15, 1868. I have since made several important improvements which are the subject of the present specification. My improvement consists of a hoop, supported at such a height as to encircle the mouth of a gas-burner at a slight distance above the burner, say one-sixth of an inch, more or less. This hoop is composed of an outer rim of steel and an inner rim of brass, riveted, soldered, or brazed together, and is fixed at one end or arm to the burner. The other end or arm moves from one side to the other, operated by the unequal expansion and contraction of the two metals; also, moving at he same time a spring connected with this arm, said spring terminating in a delicate catch or detent. The office of this catch or detent is to take hold of a pin placed in and at a right angle with the axis of the extra stop-cock. By the expansion of the compound hoop this pin is transferred from said catch or detent to another catch or detent in moving the end or arm of the compound hoop itself. By the contraction of the metal of the hoop after the flame has been, by accident or by ignorance, extinguished, this catch or detent is withdrawn from the pins, which, finding no support, drop down, being suffered to do so by means of a spiral spring surrounding the axis of the extra stop-cock, one end of said spring being fastened to said axis, the other end to the gas-burner itself. The end of the axis of the extra stop-cock is provided with a disk, on which is placed a metal rod pivoted at the end. Opposite to this point or screw is placed a pin, by means of which and the metal rod the disk, and consequently the extra stop-cock, is compelled to make the required turn for opening or shutting off the gas. To the main gas-cock is fixed a lever which, in turning the cock for the purpose of letting on gas, comes in contact with the metal rod, above referred to, by means of which the extra gas-cock is also opened. It will be readily seen that the hoop, by cooling down, and thus contracted after the gas is accidentally extinguished, will let go of the pin attached to the disk, and thus shut off the extra gas-cock.

Figure I is a side elevation of a burner with my improved device attached. Fig. II is an end view of the same. Fig. III is a plan view of the same.

A is a gas-elbow with the main gas-cock S attached, which supplies or shuts off the gas to the burner B, and in which is placed the gas-cock C, which is kept closed by the spring E. To the burner B is, by aid of the screws *a a* or otherwise, attached the compound hoop D, which encircles the flame by the circle *b*, and terminates in the leg *c*, at the end of which a catch or detent, F, is provided for. To the leg *c* is fastened a light spring, *d*, to the end of which is attached the catch or detent G, said catch being placed a few lines above the catch F. T is a pin fastened perpendicular to the axis of the extra stop-cock C, to the axis of which the spiral spring E is attached. J is a stand for holding the other end of the spiral spring. K is a pin to prevent the extra stop-cock to turn any further than necessary in any direction. L is a disk; M, a cut in said disk; N, a metal rod pivoted at O. P is a pin inserted in the disk opposite to the pivot O. R is a lever attached to the main gas-cock S.

Having thus described my invention, I desire to claim—

The compound hoop D, in combination with the catches or detents F and G and the spring *d*, the extra gas-cock H, with the disk L, spring E, metal rod N, pin P, and lever R, all substantially as and for the purpose heretofore set forth and specified.

GEO. E. SMITH.

Witnesses:
A. C. CRONDAL,
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