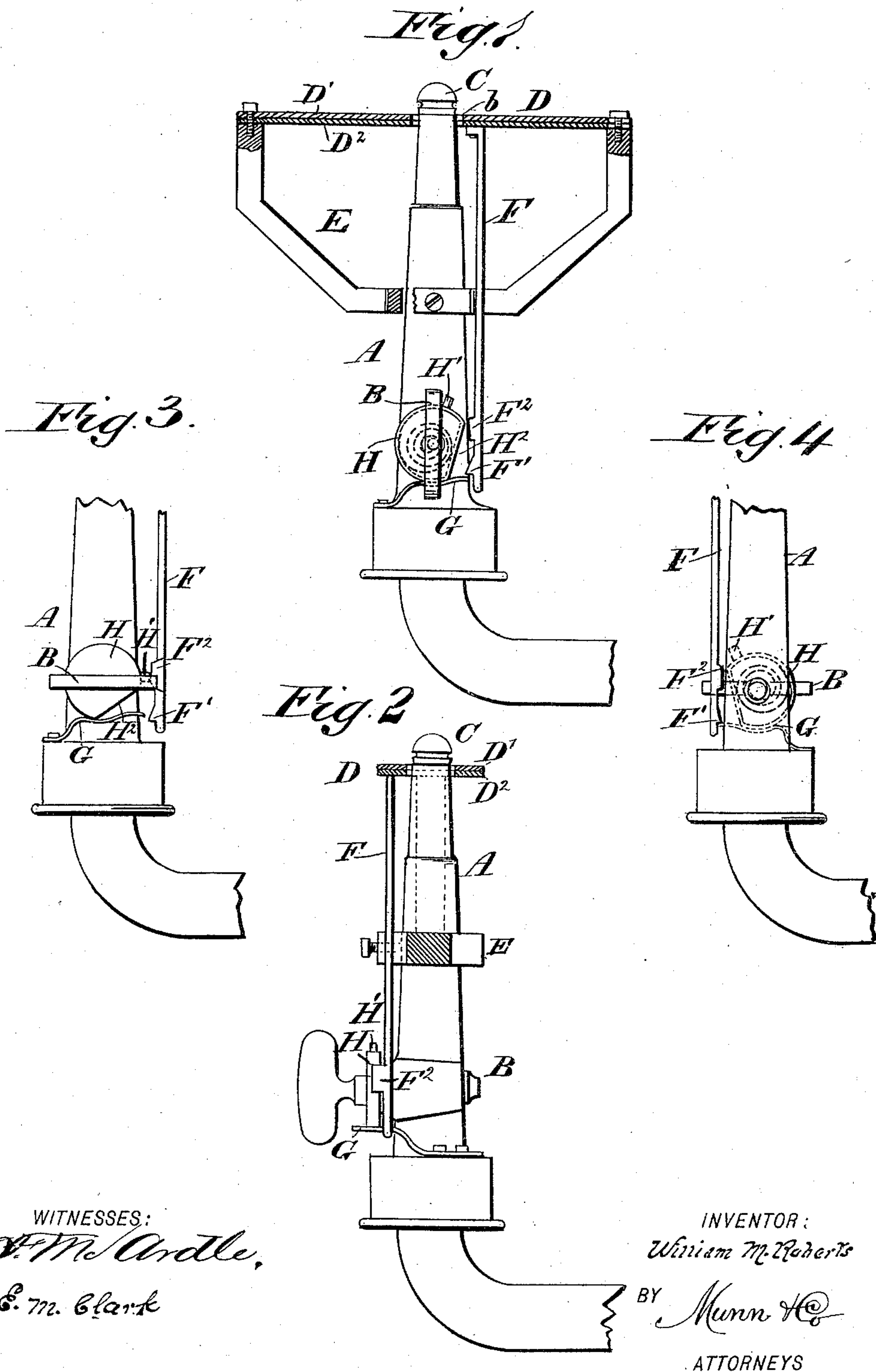


(No Model.)

W. M. ROBERTS.
SELF CLOSING GAS BURNER.

No. 474,695.

Patented May 10, 1892.



UNITED STATES PATENT OFFICE.

WILLIAM M. ROBERTS, OF JOLIET, ILLINOIS.

SELF-CLOSING GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 474,695, dated May 10, 1892.

Application filed March 27, 1891. Serial No. 386,646. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. ROBERTS, of Joliet, in the county of Will and State of Illinois, have invented a new and Improved Self-Closing Gas-Burner, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved gas-burner which is simple and durable in construction and arranged to close automatically when the flame is accidentally blown out or the gas shut off at a distant point.

The invention consists of a fixed bar arranged near the flame of the burner and carrying a rod having a shoulder, a spring-pressed cock provided with a brake-wheel, and a brake-spring adapted to engage the said wheel and also adapted to be engaged by the said rod to free the spring-pressed cock to permit the latter to close.

The invention also consists of certain parts and details and combinations of the same, as will be hereinafter fully described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front view of the improvement with parts in section. Fig. 2 is a side elevation of the same with parts in section. Fig. 3 is a front view of part of the improvement with the cock turned off, and Fig. 4 is a rear elevation of the same.

The improved self-closing gas-burner is provided with a burner A, containing the usual cock B and provided near its upper end with the tip C. The latter passes through an opening in a plate D, made of two metal strips D' and D² of different material, preferably brass and steel, so that when the plate is heated from the flame issuing at the tip C the said plate bends upward. The ends of the plate are secured to a bracket E, held by a set-screw or other means on the burner A, and on the under side of the said plate D is secured a downwardly-extending rod F, formed near its lower end with a shoulder F' and a lug F². The shoulder F' is adapted to engage the free end of a spring G, held on the burner A and adapted to press on a wheel H, secured on the cock B and containing a spring for

closing the said cock whenever the spring G is disconnected from the wheel H, it being understood that the force of the spring G overbalances the pressure of the spring contained in the wheel H. On the periphery of the wheel H is formed a pin H', and part of the wheel is cut out, as at H², as is plainly shown in Fig. 1.

The operation is as follows: When the cock B is turned off, the several parts are in the position illustrated in Fig. 3—that is, the pin H' abuts against the lug F² of the rod F, so as to hold the shoulder F' away from the free end of the brake-spring G. Now when the gas is to be ignited the operator turns the cock B into the position shown in Fig. 1, so that the gas passes to the tip C and is ignited thereon. In turning the cock B into the position mentioned the pin H' swings away from the lug F², so that the shoulder F' abuts against the outer edge of the spring G, the back of the notch, however, being below the end of the spring. The heat from the flame soon heats the plate D, so that the latter bends upward, owing to the different metallic strips composing the said plate. The rod F is moved upward with the plate D, so that the shoulder F' passes upward and over the free end of the spring G to about the position shown in Fig. 1, the back of the shoulder resting on top of the spring. Now when the flame is accidentally blown out or the gas to the burner A is shut off at a distant point then the plate D soon cools and resumes its former normal position—that is, moves downward—and by this movement causes a like movement of the rod F, which by the shoulder F' presses on the free end of the spring G, so that the latter is disengaged from the periphery of the brake-wheel H. As soon as this is accomplished the spring in the brake-wheel H exerts its power and closes the cock B. The latter thus turns into the position shown in Fig. 3, whereby the pin H' engages the lug F², and thereby forces the lower end of the rod F outward, whereby the shoulder F' is again disengaged from the free end of the spring G and the latter resumes its former position, pressing on the periphery of the brake-wheel H, thus holding the cock B locked. The cut-out part H² allows the wheel H to revolve for the remaining distance entirely free from the brake-spring, so

that the pin H' can strike against the lug F² with full force to disengage the shoulder F' from the spring G. Thus in case the gas is accidentally blown out or shut off, as mentioned, the cock B automatically closes, so as to prevent escape of gas from the burner A into the room in which the burner is located.

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

1. A self-closing gas-burner comprising a fixed bar arranged near the tip of the burner, a rod secured on the said bar and having a shoulder, a spring-pressed cock provided with a brake-wheel, and a brake-spring engaging the said wheel and adapted to be engaged by the said rod to free the spring-pressed cock to permit the latter to close, substantially as shown and described.

2. In a self-closing gas-burner, the combination, with a fixed bar or plate made of two strips of different metal, of a rod extending from the said bar or plate and formed with a shoulder, a spring-pressed self-closing cock held in the burner, and a brake-spring adapted to press on the said cock to overcome the force of its spring, the said brake-spring being adapted to be engaged by the shoulder on the said rod, substantially as shown and described.

3. In a self-closing burner, the combination, with the burner proper and a spring-pressed cock held therein, of a fixed metallic bar or plate arranged near the tip of the burner, a rod extending downward from the said plate

and formed with a shoulder and a notch, and a brake-spring adapted to engage the said cock and adapted to be engaged by the shoulder on the said rod, substantially as shown and described.

4. In a self-closing burner, the combination, with the burner proper and a spring-pressed cock held therein, of a fixed metallic bar or plate arranged near the tip of the burner, a rod extending downward from the said plate and formed with a shoulder and a notch, a brake-spring adapted to engage the said cock and adapted to be engaged by the shoulder on the said rod, and a pin held on the said cock and adapted to engage the said shoulder on the rod, substantially as shown and described.

5. In a self-closing gas-burner, the combination, with the burner and a spring-pressed cock, of a metallic bar or plate held near the tip of the burner, a downwardly-extending rod secured to the bar or plate and provided with a shoulder and a lug, a brake-wheel carried by the cock, having a portion of its periphery cut away and provided with a pin, and a brake-spring adapted to engage the brake-wheel and to be engaged by the lug of the said rod, substantially as herein shown and described.

WILLIAM M. ROBERTS.

Witnesses:

E. S. PORTER,
THOS. STEVENSON.