P. BRAND & E. J. KING.
Gaslight-Extinguishers.

No. 206,926. Patented Aug. 13, 1878.

Fig. 1.

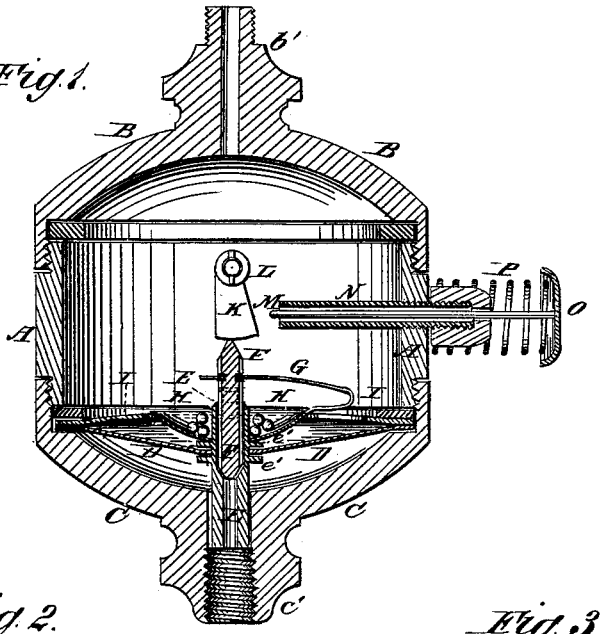


Fig. 2.

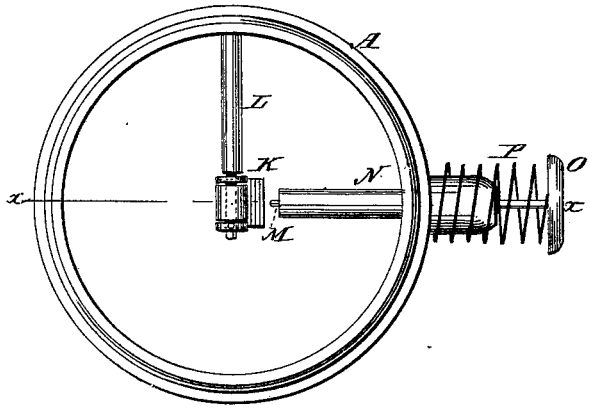
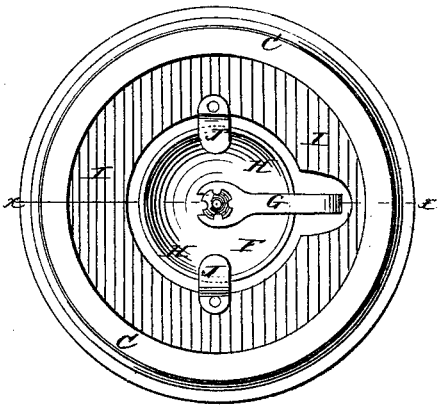


Fig. 3.



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UNITED STATES PATENT OFFICE.

PHILIPP BRAND AND EDWARD J. KING, OF JACKSONVILLE, ILLINOIS.

IMPROVEMENT IN GAS-LIGHT EXTINGUISHERS.

Specification forming part of Letters Patent No. **206,926**, dated August 13, 1878; application filed July 15, 1878.

To all whom it may concern:

Be it known that we, PHILIPP BRAND and EDWARD J. KING, of Jacksonville, in the county of Morgan and State of Illinois, have invented a new and useful Improvement in Gas-Light Extinguishers, of which the following is a specification:

Figure 1 is a vertical section of our improved device, taken through the line *x x*, Figs. 2 and 3. Fig. 2 is a detail top view of the cylinder of the case, and Fig. 3 is a detail top view of the lower cap of the case and its attachments.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved device to be applied to gas-burners and their supply-pipes, which shall be so constructed that the light may be extinguished by varying the gas-pressure at the gas-works or at other points, as may be desired, and which may be adjusted to burn gas under high or low pressure, as required.

The invention consists in the combination of the diaphragm, the tube, the valve, the spring, and the swinging locking-piece with each other and with the case; in the combination of the pin and the spring with the case, for pushing back the locking-piece to admit gas to the burner; in the combination of the weight-cup with the tube, the valve, and the diaphragm, as hereinafter fully described.

The case is made in three parts—a hollow cylinder, A, having a cap, B, screwed upon its upper end, and a cap, C, screwed upon its lower end. The cap B is provided with a nozzle, *b'*, having a screw-thread cut upon it to receive the burner or a pipe leading to said burner. The cap C is provided with a nozzle, *c'*, having a screw-thread cut in it to enable it to be screwed to the end of a gas-pipe. The joints between the ends of the cylinder A and the caps B C shall be packed or cemented to prevent leakage. In the joint between the lower end of the cylinder A and the lower cap, C, is clamped the edge of a diaphragm, D, which has a hole through its center to receive the pipe E, and its inner edge is clamped between two collars, *c'*, upon the said pipe E. The pipe E passes down into the inlet-hole in the cap C, which serves as a guide to it as it moves up and down. The pipe E is made so much smaller than the inlet-hole of the cap C that the gas can readily pass up around the said pipe E into the chamber beneath the diaphragm D. In the interior of the pipe E is formed a seat for the valve F, which is made in the form of a cylinder, with a conical or rounded lower end, and with longitudinal grooves in its sides for the passage of the gas.

If desired, the lower end of the valve F may be concaved to fit into a cup formed upon the lower part of the pipe E. In this case quicksilver may be placed in the said cup to form a seal for the valve F, to prevent gas from passing when the valve is closed.

The valve E is held up by the bent spring G, the upper end of which is forked to enter a groove formed around the upper part of the valve F, and its lower end is attached to the side of the cup H. The cup H has a hole in its bottom to receive the pipe E, rests upon a collar of the said pipe E, and is designed to receive shot or other weight, to hold the pipe E and the diaphragm D down against any desired pressure.

The upward movement of the diaphragm D is limited by a conical ring-flange, I, the outer edge of which is clamped in the joint between the cylinder A and the cap C. To the inner edge of the ring-flange I are attached lugs J, for the edge of the weight-cup H to strike against to limit the upward movement of the pipe E.

K is a piece or block, the lower end of which is rounded off, and its upper end is pivoted or hinged to the inner end of the arm L, so that it may swing down above the upper end of the valve F to lock the said valve upon its seat. The outer end of the arm L is rigidly attached to the side of the cylinder A. The lock-piece K is pushed back from over the valve F by a pin or rod, M, which passes in through a stuffing-box in the side of the cylinder A and through a guide-tube, N, attached to the said cylinder.

The pin or rod M has a knob, O, attached to its outer end for convenience in operating it. The rod M is held out by a spiral spring, P, placed upon its outer part, with its inner end resting against the side of the cylinder A, and with its outer end resting against the knob O. With this construction, when the

parts are in the position shown in Fig. 1, the gas is shut off.

When the gas is to be lighted, the rod M is pushed inward, which pushes the locking-piece K back from the valve F and allows the said valve to be raised, to admit gas to the burner, by the spring G.

When the light is to be extinguished, the pressure upon the gas in the mains is diminished at the gas-works, or at other convenient points. This diminution of pressure causes the diaphragm D and pipe E to sink and lower the valve F, so that the lock-piece K can swing forward over the upper end of the said valve F. If, now, the pressure upon the gas is restored, the gas will raise the diaphragm D and the pipe E, pressing the valve-seat of the pipe E against the valve F, and pressing the valve F against the locking-piece K, shutting off the gas and extinguishing the light.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination of the diaphragm D, the tube E, the valve F, the spring G, and the swinging locking-piece K with each other and with the case A B C, substantially as herein shown and described.

2. The combination of the pin M and the spring P with the case A B C, for pushing back the locking-piece K to admit gas to the burner, substantially as herein shown and described.

3. The combination of the weight-cup H with the tube E, the valve F, and the diaphragm D, substantially as herein shown and described.

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