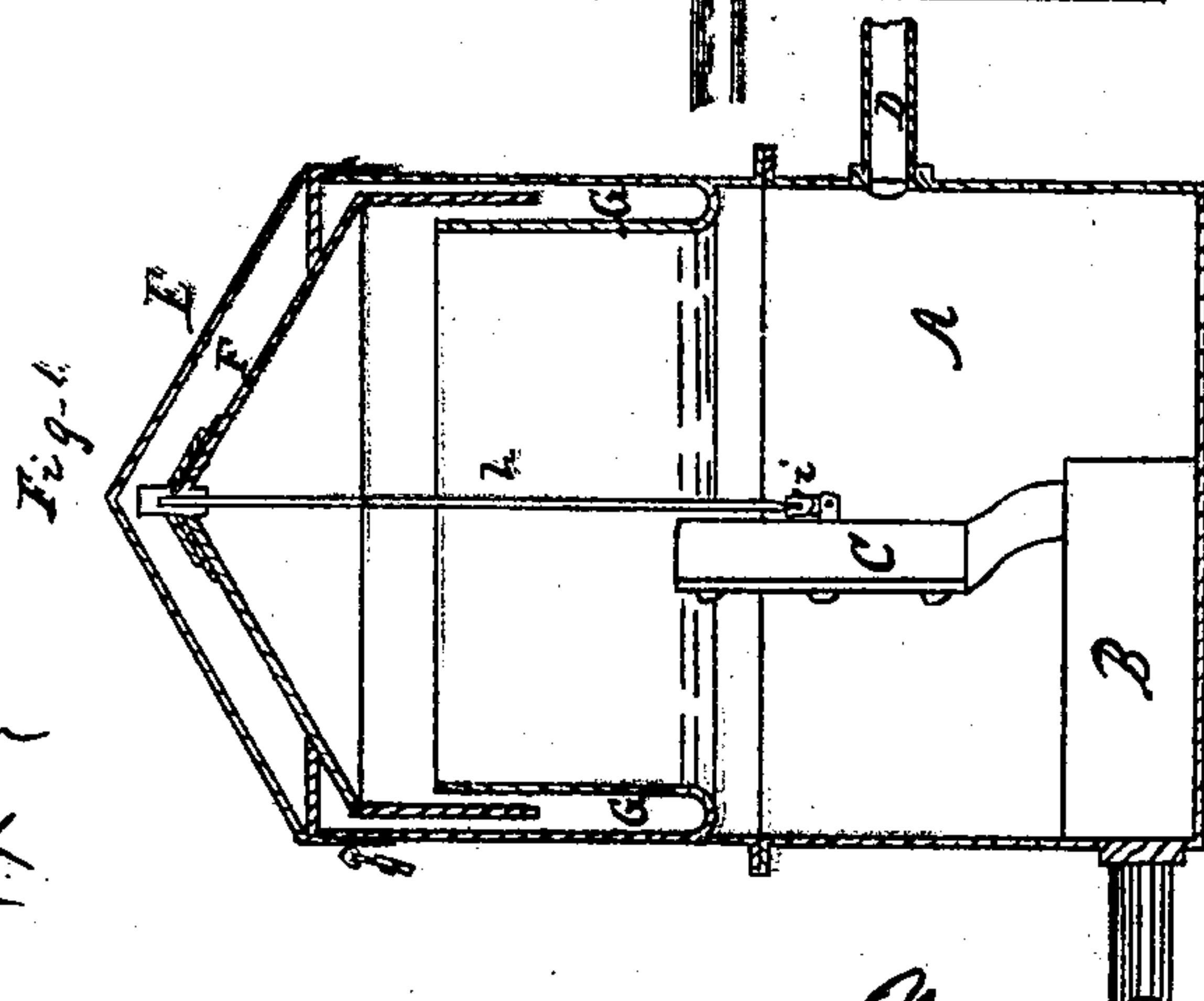
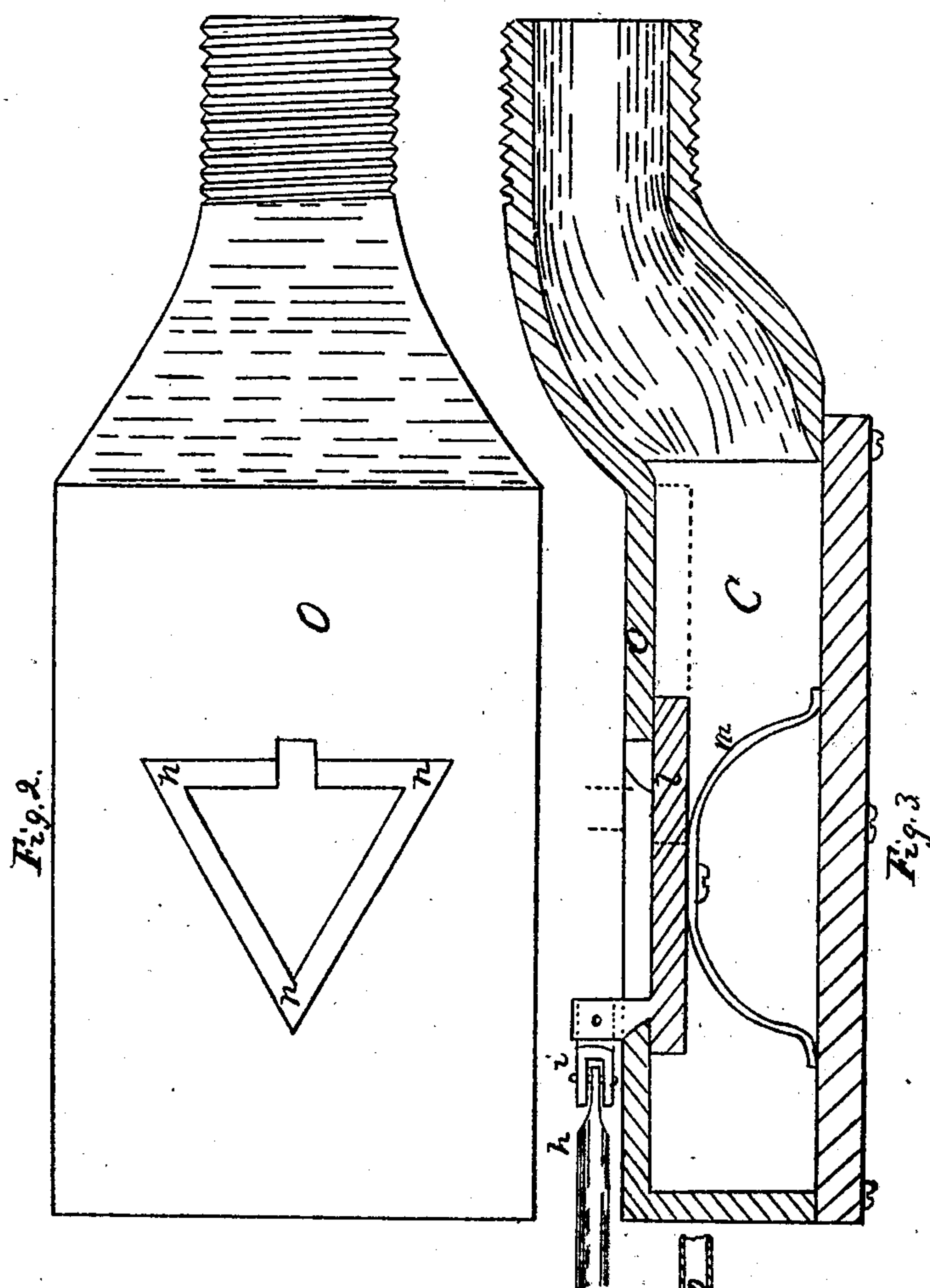


W. A. SIMONDS.
GAS REGULATOR.

No. 75,210.

Patented Mar. 3, 1868.



Witnesses.

Madison Wheeler
Thos Wm Clark

Inventor.

Warren A. Simonds

United States Patent Office.

WARREN A. SIMONDS, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND HENRY H. HYDE, OF SAME PLACE.

Letters Patent No. 75,210, dated March 8, 1868.

IMPROVED GAS-REGULATOR.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WARREN A. SIMONDS, of Boston, in the county of Suffolk, and State of Massachusetts, have invented a new and useful Improved Gas-Regulator; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section.

Figure 2, an elevation of the valve-chest.

Figure 3, a section of the valve-chest.

Like letters indicate like parts in all the figures.

This invention is of a new regulator for the pressure of gas, and is applicable for the ordinary coal-gas of cities. It consists of an iron cylinder, A, into which gas enters through pipe B and valve-chest C, and from which it is delivered for consumption through pipe D. This cylinder has a cover, E, which is locked on the outside. An annular groove, G, runs round the periphery of cylinder A, in its interior, which is filled with mercury, and in this floats the bell F. To the centre of the dome of this is attached rod *h*, which fastens by joints *i* and *k*, at right angles with each other, a sort of universal coupling to valve *l*. This valve slides on plane surfaces on the interior of valve-chest C, is pressed close to the inner surface O of valve-chest C by spring *m*, and closes or opens the triangular opening *n* of chest C, in plate O. The apex of the triangle points upwards, thus giving a very quick and sensitive motion to the bell.

The apparatus is eminently qualified for the regulation of the flow of gas. A triangular opening is one eminently favorable to regulation of pressure. It presents the maximum of boundary and minimum of area. The construction of the valve is simple, with no liability to disorder, and the connections between valve and bell are direct, straight, and close. Almost every part is a plain casting, and the surfaces to be fitted are few, and the work on them plain and simple.

A pressure of three inches of water, or less, is readily reduced by this machine one half, and rendered very equable. To burn gas economically and without waste, a comparatively light pressure and free opening are desirable. If the opening be narrow and the passage quick, the gas will roar, and part of it pass off unconsumed. This regulator accomplishes what is desired, and is indestructible by the corrosive action of the gas.

I claim as my invention, and desire to secure by Letters Patent—

1. The arrangement of cylinder A, with its interior annular ring or chamber, filled with mercury, and inlet and egress-passages B and D, in connection with floating bell F and rod *h*, opening and closing valve *l*, in valve-chest C, all operating together as and for the purpose described.

2. The construction of the regulation-valve, consisting of valve-chest C, with its triangular opening *n*, in plate O, and having arranged within it slide *l*, pressed by spring *m*, to open or close the said opening, all operating together, as and for the purpose described.

Witnesses:

THEODORE WHEELER,
THOS. WM. CLARKE.

WARREN A. SIMONDS.