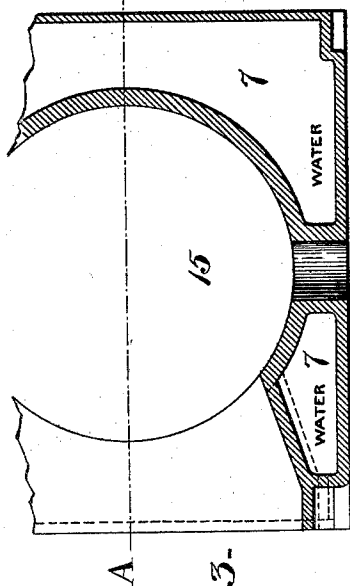
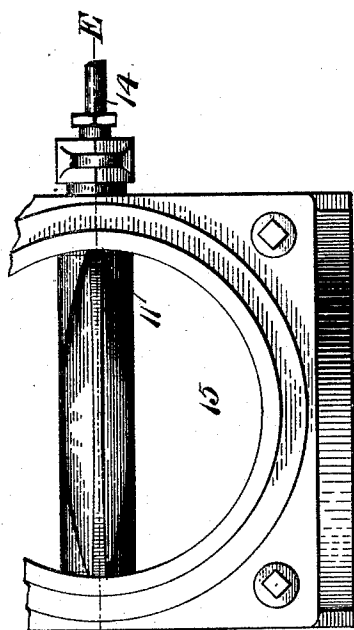


(No Model.)

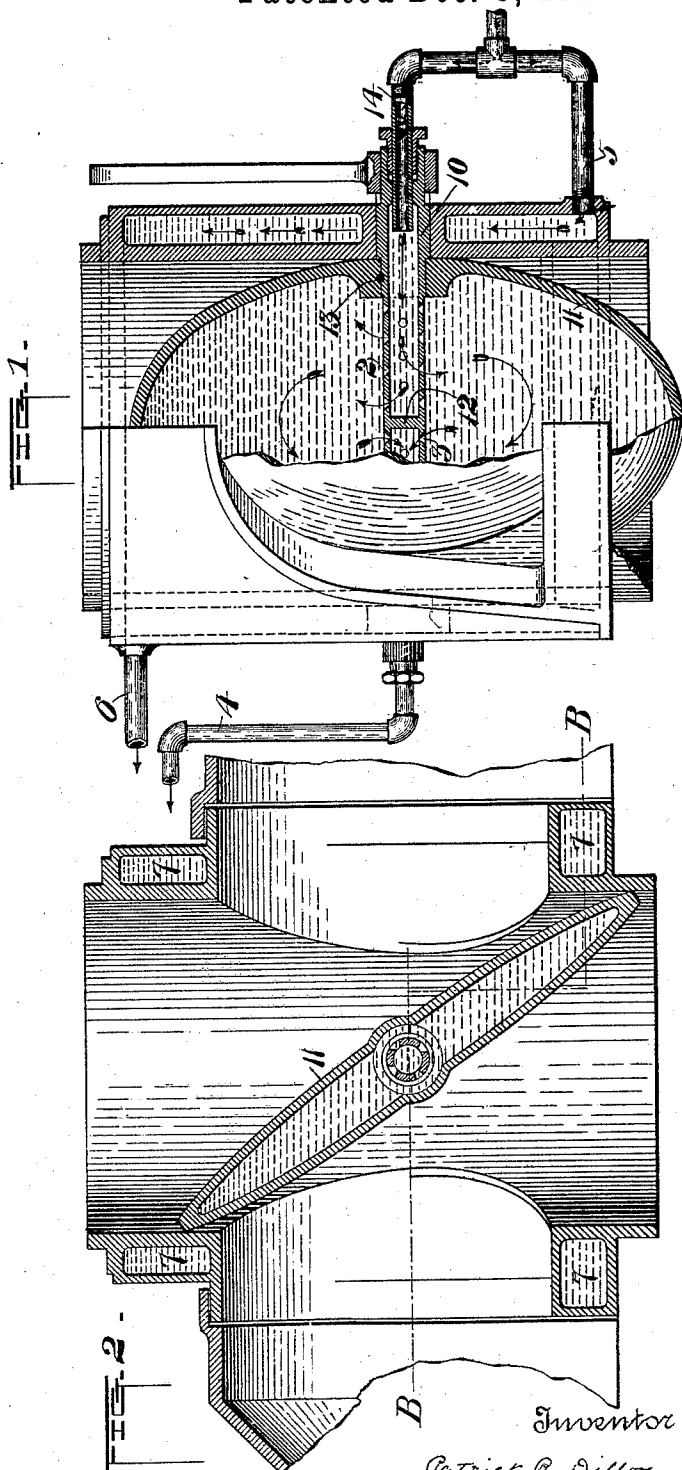
P. R. DILLON.
VALVE FOR GAS FURNACES.

No. 510,008.

Patented Dec. 5, 1893.



Witnesses
W. W. Bryant
H. M. Landon



Inventor
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UNITED STATES PATENT OFFICE.

PATRICK R. DILLON, OF PITTSBURG, PENNSYLVANIA.

VALVE FOR GAS-FURNACES.

SPECIFICATION forming part of Letters Patent No. 510,008, dated December 5, 1893.

Application filed November 16, 1892. Serial No. 452,152. (No model.)

To all whom it may concern:

Be it known that I, PATRICK R. DILLON, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Valves for Gas-Furnaces, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation, partly in section, on the line E—E of Fig. 4. Fig. 2 is a vertical sectional view on the line A—A of Fig. 3. Fig. 3 is a horizontal sectional view on the line B—B of Fig. 2; and Fig. 4 is a plan view.

Like figures of reference indicate like parts wherever they occur.

As is well known, great trouble has been experienced with valves for gas furnaces, owing to the effect of the heat on the valve-chamber and butterfly, the heat warping, cutting and destroying the same, so that in a short time they leak gas and have to be replaced at considerable cost of time, labor, and material.

The object of my invention is to obviate the loss incident to the frequent replacement or renewal of the valves, by protecting the valve from the injurious effect of the heat and to this end it consists in appliances whereby the several parts of the valve chamber and the valve or butterfly are kept cool by a flow of water or other cooling medium through or around the same.

I will now describe my invention so that others skilled in the art may manufacture and use the same.

Referring to the drawings, 15 represents the valve-chamber, which may be of the usual form. Completely surrounding this chamber, is a water-tight jacket or shell 7 between which shell and the valve chamber 15 is a sufficient space to allow for the free circulation of water around the chamber, the purpose of which is to keep the valve chamber cool, and thereby prevent the heat from cutting, warping, or injuring the walls of the same. Leading into the water chamber 7, at the bottom of the same, is a water supply pipe 5. At the opposite side and at the top of the water chamber is the water outlet pipe 6, which allows the water to pass from the

water chamber. The valve or butterfly 11 is hollow throughout, so as to allow water to circulate through all parts of the same. This butterfly is keyed by the pin 13 to a hollow perforated spindle 10, which is provided with a stuffing-box at each end and is there connected with the water supply pipe 14 and water outlet pipe 4. Midway in the spindle 10, is the solid partition 12, which, stopping the direct flow of water through the spindle, causes it to pass into the body of the hollow valve through the perforations 2, and thence the water again entering the spindle 10 through the perforations 3, passes out through the outlet pipe 4.

The advantages of my improvement are that the water is caused to circulate around all parts of the valve chamber and through the valve itself, so that the valve and chamber being kept cool are prevented from being destroyed and injured by the heat, thereby effecting a great saving in time, labor and material.

I claim—

1. In a valve for gas furnaces, the combination of the valve-chamber, a water jacket inclosing the same, a hollow valve, a spindle in the form of a tube having openings into the cavity of the valve, and a bent pipe connecting the valve-spindle and the water jacket; substantially as described.

2. In a valve for gas furnaces, the combination of a hollow valve, and a hollow spindle having a partition midway of its length within the valve, and having perforations leading to and from the cavity of the valve on opposite sides of the partition; substantially as described.

3. In a valve for gas furnaces, the combination of the valve chamber, a water jacket inclosing the the same, a hollow valve, a hollow spindle opening into the cavity of the valve, a bent pipe connecting the valve-spindle and the water jacket, and an inlet pipe leading to the bent pipe; substantially as described.

In testimony whereof I have hereunto set my hand.

PATRICK R. DILLON.

Witnesses:

W. B. CORWIN,
JAMES K. BAKEWELL.