

R. B. LOCKE.

Gas Burner.

No. 76,333.

Patented April 7, 1868.

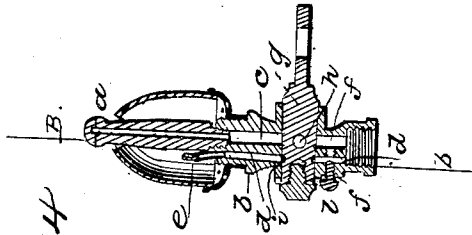


Fig. 4



Fig. 6

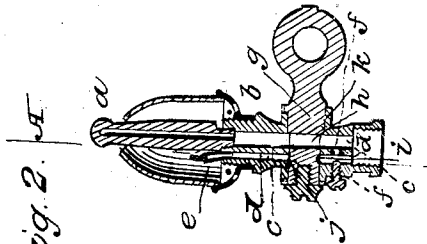


Fig. 2

Fig. 5

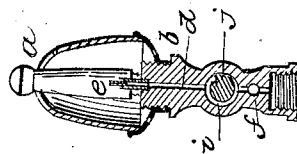


Fig. 1

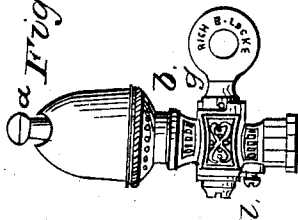
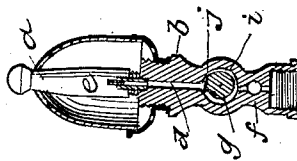


Fig. 3



Witnesses
Wm. B. Lock
Thomas Bishop

Inventor
Rich. B. Locke

United States Patent Office.

RICHARD B. LOCKE, OF NEW YORK, N. Y., ASSIGNOR TO SELF-LIGHTING GAS-BURNER COMPANY, OF THE SAME PLACE.

Letters Patent No. 76,333, dated April 7, 1868.

IMPROVEMENT IN GAS-BURNERS.

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, RICHARD B. LOCKE, of the city, county, and State of New York, have invented certain new and useful Improvements in Self-Lighting Gas-Burners; and I do hereby declare that the following is a full and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is an elevation of my improved burner.

Figure 2 is a vertical section through the centre of the burner, showing the cock turned so as to allow a full flow of gas to the primary burner whilst it is shut off from the secondary burner.

Figure 3 is a cross-section at the line A *a* of fig. 2.

Figure 4 is another vertical section, in the same plane as fig. 2, showing the cock turned so as to cut off the supply of gas to the primary burner whilst it is admitted to the secondary burner.

Figure 5 is a cross-section at the line B *b* of fig. 4; and

Figure 6 represents an elevation of the cock.

The same letters of reference refer to the same parts in each of the figures.

My present improvements relate to an invention in self-lighting gas-burners described in Letters Patent granted to myself and William B. Ulrich on the 16th day of April, 1867. One of my improvements consists in simplifying the construction of the cock-plug which admits or shuts off the flow of gas either to the primary or secondary burner; and my other improvement consists in providing the secondary burner with a regulating-screw, to regulate the flow of gas through it, according as the pressure may vary in different parts of the same building.

To enable others to make and use my improvements, I will now proceed to describe them.

In the annexed drawings, *a* represents the usual primary burner, which is tapped at its lower end into the gas-pipe *b*. Parallel with the bore *c* in this pipe, through which the gas flows to the main burner, I drill another hole, *d*, the entire length of the pipe, and to the upper end of this hole is secured the secondary burner *e*. From the outside of the gas-pipe *b*, and at the lower end, I drill another hole, *f*, inward, of about equal size with the hole *d*, and at right angles thereto, to intersect the main bore *c*, for a purpose to be presently described.

The cock *g* is inserted in the gas-pipe *b*, and fitted gas-tight, so as to permit the gas to be turned on or cut off from the main or primary burner at pleasure. This cock is formed with the usual orifice *h* through it, through which the gas passes to the primary burner when the cock is turned as represented in fig. 2. In the circumference of the cock *g*, in a plane intersecting the vertical hole *d* in the pipe *b*, I cut a groove, *i*, nearly all around, leaving a small portion of the circumference uncut. This uncut portion, *j*, of the circumference of the cock (when the cock is turned as in figs. 2 and 3) closes up that part of the vertical hole *d* above the cock, and thus prevents the escape of any gas to the secondary burner, and allows it to pass freely to the main burner. But when the cock is turned as shown in figs. 4 and 5, it will be seen that the flow of gas will be shut off from the primary burner, and will escape, through the horizontal hole *f*, around the groove cut in the circumference of the cock, and thence up the vertical hole *d*, to the secondary burner.

From the bottom of one of the terminations of the circular groove *i*, I cut a diagonal groove, *k*, on the periphery of the cock, (see fig. 6,) leading to the orifice *h*. This groove *k* is for the purpose of permitting the gas, as the cock is turned, to rush suddenly around the circular groove *i*, and up the vertical hole *d*, to the secondary burner *e*, before the full flow of gas is shut off from the main or primary burner.

It frequently becomes necessary to regulate the flow of gas to this secondary burner, because the higher they are located in buildings a slightly less flow of gas is required; and for this purpose I insert a regulating-screw, *l*, in the horizontal hole *f*, to admit more or less of gas, through the vertical hole *d*, to the secondary burner, as may be required by the pressure.

The operation is as follows: The cock being turned so as to permit the flow of gas to the primary burner, this gas is lighted in the usual manner. In the act of shutting off the gas from the primary burner by turning the cock, and just before the full supply of gas is shut off, it rushes along the diagonal groove *k*, around in

the circular groove *z*, and up the vertical hole *d*, and jets from the secondary burner, and takes fire from the nearly extinguished flame of the main burner. Thus the secondary burner will be lighted in the act of cutting off the gas from and extinguishing the primary burner. After the secondary burner has been lighted, the gas escaping to it passes through the horizontal hole *f* up to and around the circular groove *z*, and thence up the vertical hole *d*, the regulating-screw *l* controlling the escape. When it is desired to obtain light from the main or primary burner, the cock is turned in the reverse direction, and just as soon as the orifice *h* in the cock communicates with the bore *e* of the main burner, the gas rushes up to the main burner, and also along the diagonal groove *k*, and around in the circular groove *z*, and up through the secondary burner, which will cause its flame to jet upward sufficiently high to ignite the gas issuing from the main burner. When the cock-plug is fully turned, the uncut portion, *j*, of its circumference will cut off the gas from the vertical hole *d* and extinguish the light from the secondary burner. Thus the secondary burner will be extinguished in the act of admitting gas to and lighting the primary burner.

I am aware that gas-burners have been used, in which a screw, with an orifice through its centre, was placed above the cock. This I do not claim, as practical experience has demonstrated its entire impracticability; but

I do claim—

The screw *l*, in combination with a supplementary burner, when the same is constructed and arranged substantially as described.

RICH. B. LOCKE.

Witnesses:

WM. H. BISHOP,

THOMAS BISHOP.