BUSH & RICHARDS.

Coal Stove.

No. 71,129. Patented Nov. 19, 1867.

Fig. 1.

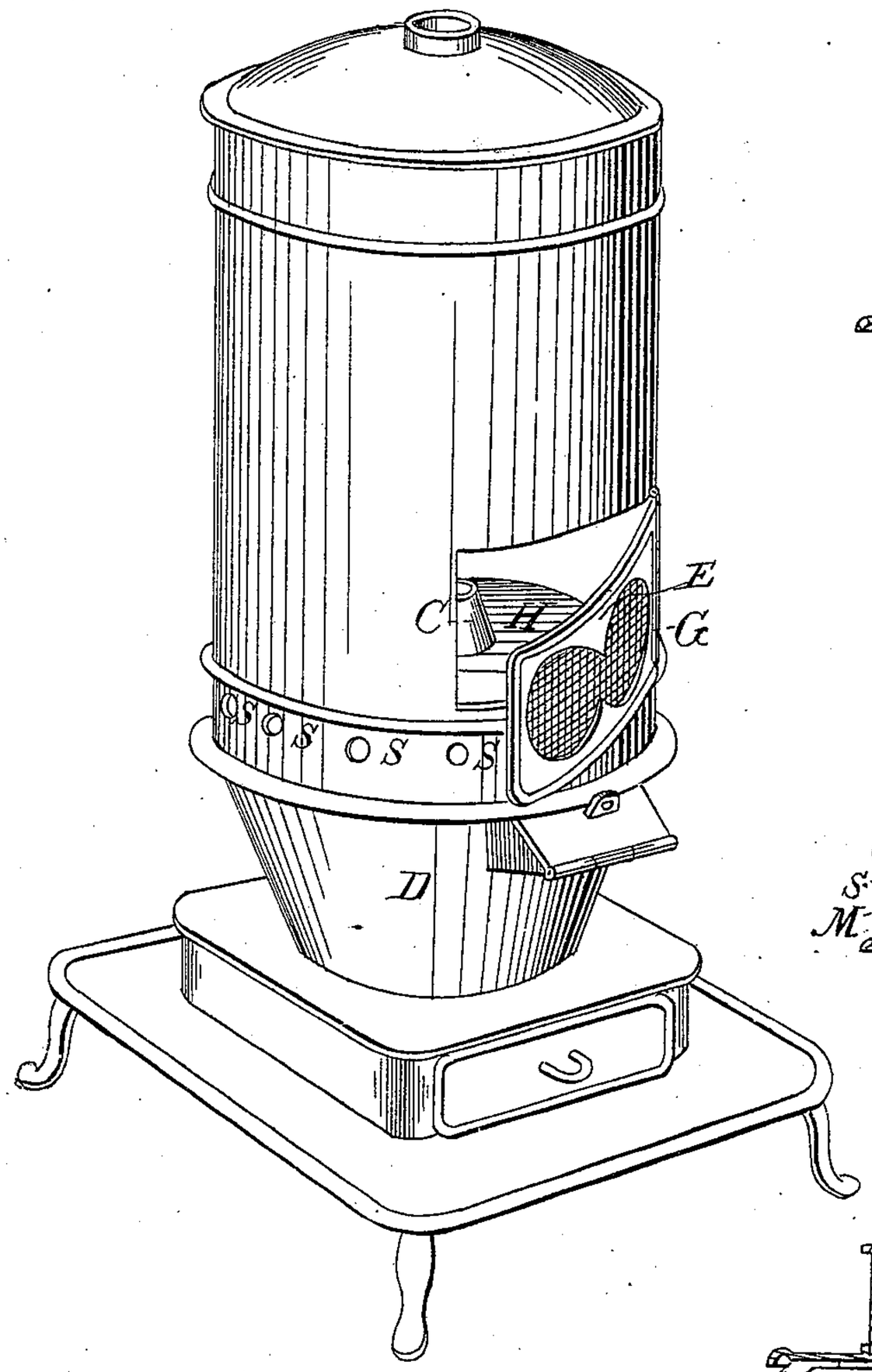
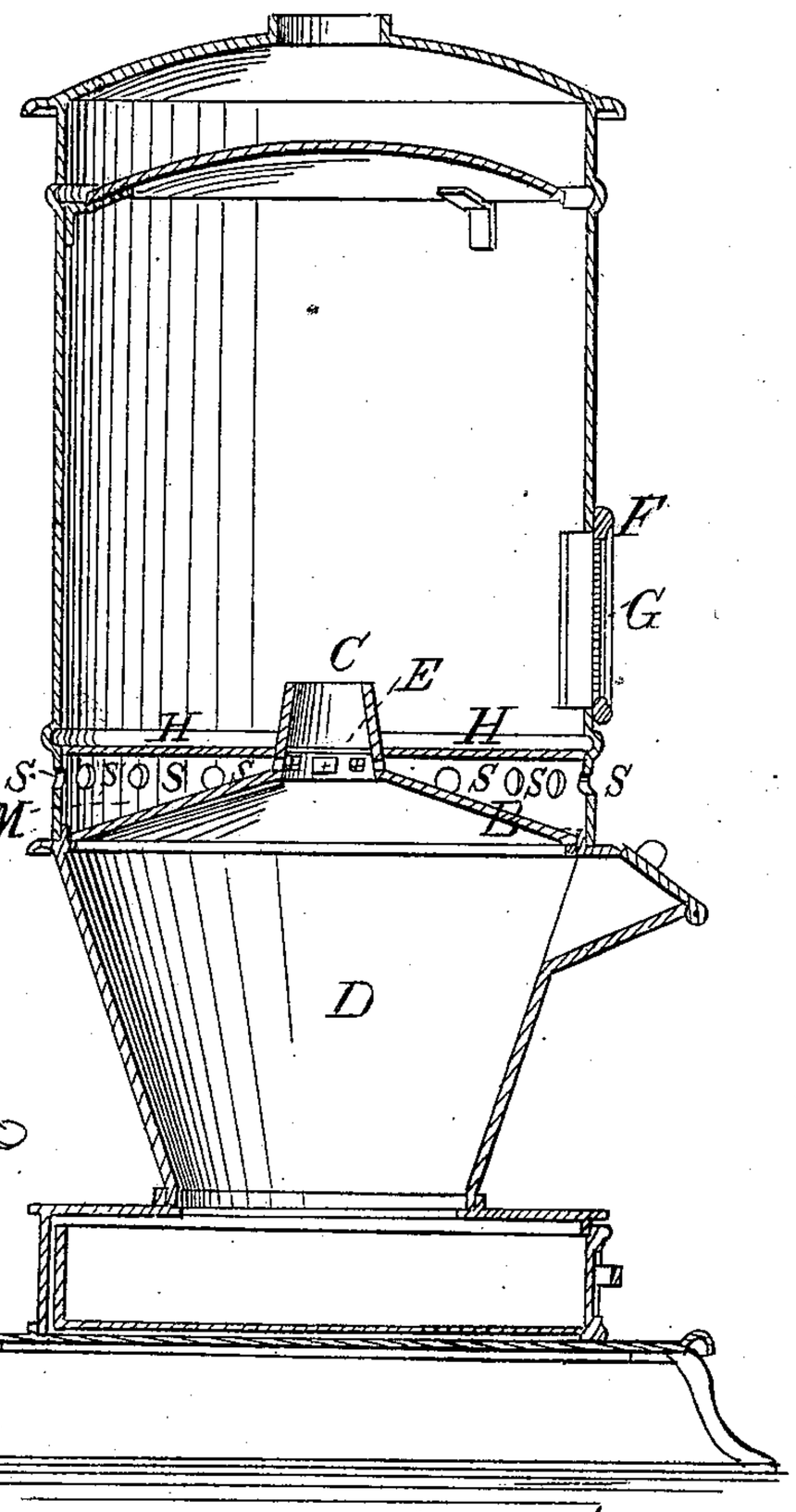


Fig. 2.



Witnesses

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WILLIAM M. BUSH AND THOMAS B. RICHARDS, OF CINCINNATI, OHIO.

Letters Patent No. 71,129, *dated November* 19, 1867.

IMPROVEMENT IN COAL-STOVES.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that we, WILLIAM M. BUSH and THOMAS B. RICHARDS, both of Cincinnati, in the county of Hamilton, and State of Ohio, have invented a new and useful Improvement in Gas or Smoke-Consuming Coal-Stoves; and we 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 annexed drawings, making a part of this specification, in which—

Figure 1 represents a perspective view of a stove containing our improvement, and

Figure 2 represents a vertical central section of the same stove.

The combustion of coal, and especially of bituminous coal, is attended with the loss of a considerable amount of fuel, which passes off unconsumed in the form of gas or smoke. Where bituminous coal is used, the smoke is dense, sooty, and penetrating, and many efforts have been made to effect its entire combustion.

Our improvement is directed to this end, and consists in admitting the air or oxygen above a concentrating plate or diaphragm to a point where it comes in contact with the ascending and concentrated gases, so as to effect their rapid and thorough combustion.

Our device consists of a concentrating plate or diaphragm, B, provided with an aperture or chimney, C, and covering the fire-pot D. The aperture or chimney, C, is provided with an interior ring, flange, or offset, E E, and is perforated with holes X X X just below the ring. Above the plate B is placed a second plate, H, extending across the stove, but provided with an aperture, so made as to fit closely about the upper part of the chimney C. Holes are made in the exterior casing of the stove, as shown at S S S. A door, F, opens above plate H, and is provided with an aperture, G, covered with wire gauze, or its equivalent, so as to permit the admission of air.

In operation, the plate B concentrates the smoke and gas, and compels them to pass into the chimney C, where they are still further concentrated by the ring or flange E. Air is admitted through the holes S S S into the annular flue or passage M, between plates B and H. It enters the chimney, C, through perforations X X X, just below the ring E, or it may be introduced at the junction of the chimney with plate B, or through perforations in the plate B near the aperture C. The oxygen of the air is thus brought in contact with the smoke and gas at or near the point of greatest concentration, and the latter are consumed with great efficiency.

Instead of entering the space M between the plates, by means of the apertures S S S, the air may enter at the bottom of the stove, may pass upward between the fire-pot and an outer casing, and so into the space M; but, in this case, the fire-pot must be closely covered by plate B, as in the drawing, so that no air can enter under the edges of said plate, and so that the air must enter over plate B, through space M, to the apertures at or near the chimney. A radiator, O, may be placed in the upper part of the chamber N. Black arrows indicate the direction of the smoke and red ones the direction of the air currents.

We do not claim the invention of a concentrating plate, nor broadly the introduction of external air in connection with such plate; but what we do claim as our invention is—

1. The combination of the annular horizontal plate H and annular converging plate B, forming a close flue for the admission of air, with the chimney C, substantially as shown.

2. The concentrating flange or ring E, in connection with the chimney C and plate B, substantially as described.

WM. M. BUSH,
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Witnesses:
SAM. S. FISHER,
JOHN C. MORRIS.