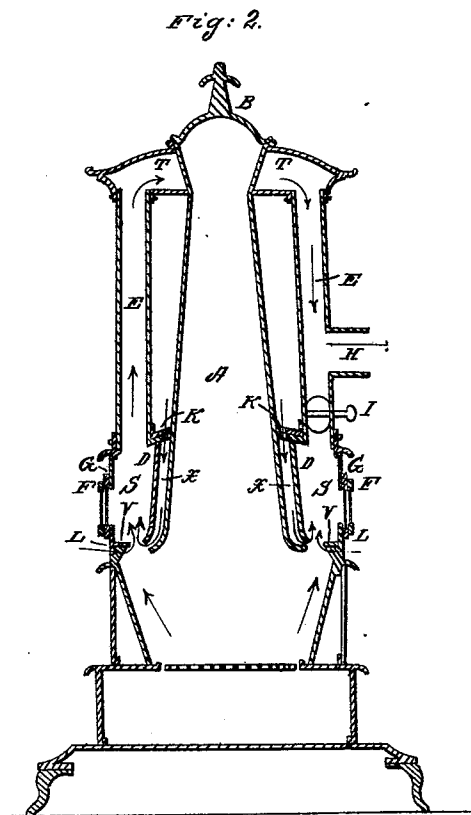
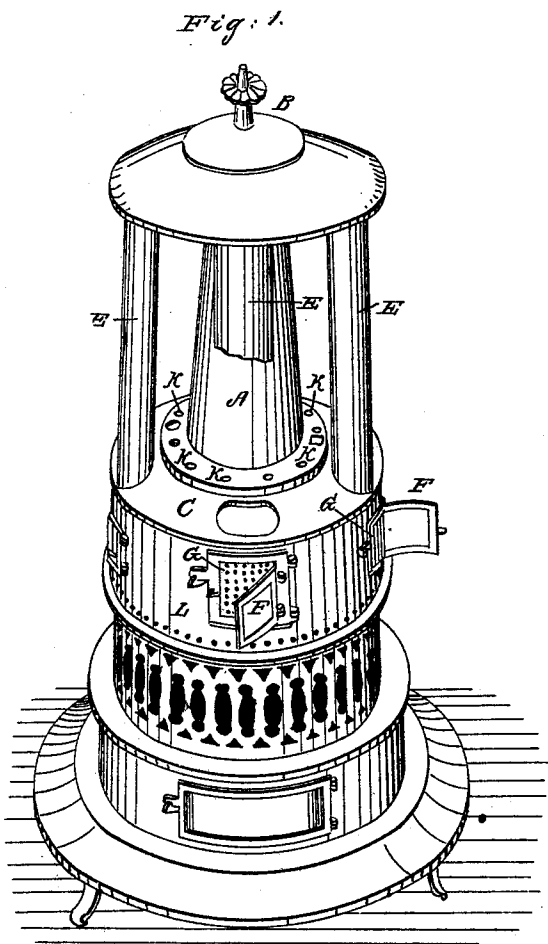


BUSH & RICHARDS.
Base Burning Stove.

No. 91,517.

Patented June 22, 1869.



Witnesses:

James Moore
W. B. Philipps.

Inventors:

Wm. M. Bush.
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UNITED STATES PATENT OFFICE.

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

BASE-BURNING STOVE.

Specification forming part of Letters Patent No. 91,517, dated June 22, 1869.

To all whom it may concern:

Be it known that we, WILLIAM M. BUSH and THOMAS B. RICHARDS, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Stoves for Burning Bituminous Coal; 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 part of this specification, in which—

Figure 1 is a perspective view of our improved stove, and Fig. 2 is a vertical section of the same.

The objects of our improvements are to provide an automatic-feeding stove for burning bituminous coal, and a greater economy in the use of fuel. This has been accomplished in our stove by the use of perforations in the side of the stove, near the top of the fire-bed, and air-inlet passages around the base of the magazine. The magazine also is, for the most part, exposed to the air, and of regularly-increasing area from the top to the bottom. The exit-flue is located at any point between the fire-chamber and a chamber at the top of the stove, as hereinafter more fully described.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and mode of operation.

A is a magazine to hold and supply coal to the fire. It is filled through the lid B, and, in its horizontal section, may be round or oval; but it should increase in area from the top to where it opens into the fire-box, as shown. Below the plate C it has an outer casing, D, Fig. 2, of the same form as itself.

On the top plate C there is a series of apertures, K K K, through which air may be admitted through the chamber formed by the lower circumference of the magazine and the case D into the fire-chamber. There is a sliding plate, R, having holes in the same relative position as the apertures K K placed over the said apertures K K, which serves as a register for the admission and graduation of air through the said chamber, or its exclusion from it. Said piece R has one or more finger-pieces, by which it may be slid in either direction, so as to close or open the apertures, for the purposes last mentioned.

G is the door, the panel of which is formed

of perforated metal. F is an outer door, fitted over the door G, having a panel of mica, not large enough to cover all the perforations in the door G, Fig. 1, the part not covered by the mica, in the door F, being at the bottom of the door, as shown.

When it is desired to have a very strong draft, both doors may be closed, or the door F or both doors may be left open, depending on the amount of draft that may be requisite.

E E E are hollow columns, through which the smoke and partially-consumed gases go on their way to the flue H. I is a damper placed in the column E', which connects with the flue H. When the damper is open the smoke and partially-consumed gases will pass immediately up to and out through it; but when the damper is closed they will pass up the other columns into the chamber T, and thence down the column connecting with the flue, when such connection is below the chamber T, to it.

Immediately under the circumferential plate V there is a row of holes, L, through the periphery of the stove, and through which air is admitted. These holes are about opposite to where the air is admitted from the chamber formed by the lower portion of the magazine A and the case D—that is, they are nearly in the same horizontal section. This is at the top of the fire-box, and the air coming in from both of these sources supplies a quantity of oxygen to the smoke and gases just as they are being liberated by the combustion in the fire-box. From this the air and unconsumed gases pass into the chamber S, being more thoroughly commingled as they proceed. In this chamber, by virtue of its form and the large supply of oxygen, the gases are nearly consumed, and a large supply of heat economized that otherwise would be lost.

When a quick draft is required, and the damper is left open, the gases pass off from the chamber S, after being somewhat more consumed on their passage up the column connecting with the flue H, and before they reach the mouth of the flue; and this quantity will depend on the location of the mouth of the flue in the column. The higher it is the more nearly will the gases be consumed; but when the damper is closed the partially-consumed gases pass up the other columns to the

chamber T, bearing with them a sheet of flame, and pass down the column connecting with the flue to its mouth. The combustion may be increased, also, by removing the lid B of the stove, upon the doing of which a current of air will pass down through the magazine A and pass off with the smoke into the chamber S. The consuming of these gases evolves intense heat in the chamber S, but the cold air, passing down the chamber formed by the lower portion of the magazine and the case D, prevents those parts from being burned.

By means of the sliding plate or register R and the double doors F and G the temperature may be regulated at pleasure, and the same benefits attained at any temperature.

Having thus described our invention, we do not wish to be understood as claiming the circumferential plate V or the holes L, either singly or in combination; but

What we claim as new, and desire to secure by Letters Patent, is—

1. The register K, passage X, formed by the magazine A and drum D, in combination

with the series of holes L, substantially as shown and described.

2. The combination of a perforated door, G, with an outer door, F, containing a mica panel, substantially as shown and described.

3. The passage X, formed by the magazine A and drum D, in combination with the series of holes L and plate V, substantially as shown and described.

4. The combination of the magazine A and the series of holes L, all as shown and described.

5. The exit-flue H, placed in pipe E', in any position between the chambers S and T, as and for the purpose described.

6. The damper I, arranged in pipe E' relative to exit-flue H, as and for the purpose described.

WM. M. BUSH.
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Witnesses:

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