126. STOVES & FURNACES,
Dampers,
Distance operating devices.

126. STOVES & FURNACES,
Stoves, Heating, Magazine.

Draftsman.

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# SNYDER & GARRETT.

## Magazine Stove.

No. 110,083. Patented Dec. 13, 1870

Fig. 1.

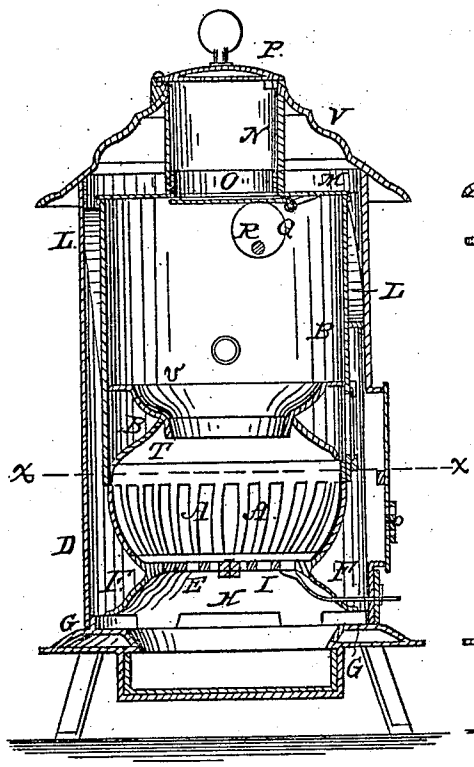



Fig. 2.

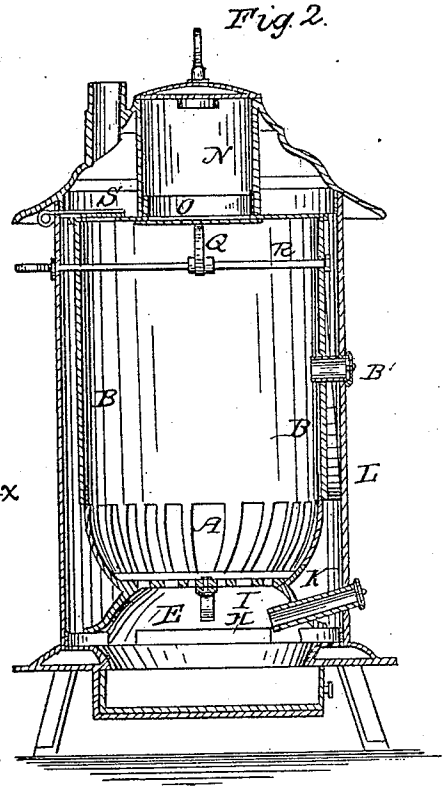
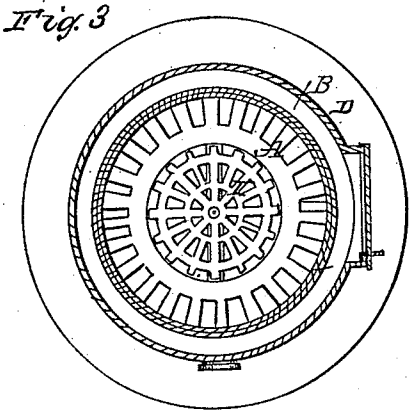



Fig. 3

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Letters Patent No. 110,083, dated December 13, 1870.

# IMPROVEMENT IN BASE-BURNING 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, ISRAEL SNYDER and PETER C. GARRETT, of Cedar Rapids, in the county of Linn and State of Iowa, have invented a new and useful Improvement in Base-Burning Stoves; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming a part of this specification.

This invention relates to improvements in base-burning stoves, and consists in making the fire-pot open at the sides, from the grate up to the bottom of the reservoir with which it is connected.

The said open fire-pot being used, and the draught being arranged to cause the flame and caloric currents to impinge against the outer shell of the cylinder, as low down and as directly as possible; the said arrangement provides a space between the cylinder and the fire-pot to the bottom of the stove, for heating purposes.

The invention also comprises a supply-magazine above the reservoir, which may be filled and covered, and then opened at the bottom to discharge the coal into the reservoir in a way to avoid the escape of gases into the room.

The invention also comprises the application of certain inside plates, for use when burning hard coal, whereby the same is more efficiently done, the said plates being removed when burning soft coal, in which case they are not required.

Figure 1 is a sectional elevation of our improved stove when arranged for burning hard coal;

Figure 2 is a sectional elevation in a plane perpendicular to that of fig. 1, and when adjusted for soft coal; and

Figure 3 is a horizontal section of the same, taken on the line $x\,x$ of fig. 1.

Similar letters of reference indicate corresponding parts.

Instead of using the close sided brick-lined fire-pots now commonly used, we propose to make the same open at the sides, as shown at A, and we arrange the reservoir cylinders B to fit on the tops of the pots, as shown, so that the caloric currents will pass through the openings directly against the outside cylinders D, and as low down as possible.

We also make this arrangement to continue the heating space inside the case D to the bottom of the stove.

Below the fire-pot, for its support, and for providing an air space E to supply the air to the bottom of the grate, is a plate, F, resting on the bottom G, and provided with holes H, to allow part of the air to pass into the heating space between the pot A and the cylinders D.

The bottom grate I may be arranged for shaking and dumping in the ordinary way.

Air to support combustion, and also to supply the space between the cylinders to feed the gases, may be admitted through the tube K to the space E below the fire, a part of which passes up through the passages H.

We propose to employ spiral or other shaped flanges, or guiding plates L, between the cylinders B and D, for directing the product of combustion around in the space in its upward course, in a way to cause the most direct contact thereof with the outside shell to cause the greatest radiation of heat.

The reservoir is provided with a cover, M, below the top of the stove, and above this and below the cover is a magazine, having a drop door, O, at the bottom, and a cover, P, at the top.

The door O is closed by an eccentric-wheel, Q, under it, on a shaft, R, passing through the side of the stove, for turning by hand.

This bottom door, being kept closed, will prevent the escape of any gases or smoke when the cover P is taken off to put in coal; and the cover P being put on previous to opening, the door O will prevent the escape of gas then, so that the fire may be supplied without the escape of gas or smoke, as in other stoves.

The slide door S is employed to open a direct escape, to be used for starting the fires.

For burning hard coal we employ the two concave plates T U, above the fire-pot, for contracting the supply of coal, and limiting it so that there will be a clear space under the plate T and above the coal around the top of the grate, which we find to facilitate the burning of the hard coal; but for soft coal, which burns more freely, these plates are not required. These plates may be cast either in sections or in one piece, as may be found most convenient.

By the employment of this cylinder B and fire-pot A, we may readily convert any cylinder stove into a base-burner, and other base-burners may also be supplied with these cylinders and pots.

The arrangement is such that, by removing the top V, the cylinder B and the fire-pot may be taken out for the application of new ones when worn out, or for other purposes.

The fire-pot will be much more durable in this arrangement than when made in the common way.

Having thus described our invention,

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

1. The combination of shell D, cylinder B, and

open-work fire-pot A, with a detachable cap U T, constructed and applied, as and for the purpose specified.

2. The arrangement, transversely across the upper part of the cylinders B D, of a shaft R, and eccentric Q, for the purpose specified.

3. The combination of fire-pot with a close cylinder B, having draught door S, immediately under the outlet pipe, as set forth, and for the purpose described.

4. The combination of the plates L with the cylinders B D, constructed and arranged substantially as described.

5. The upwardly-converging plate T, combined with a funnel or coal-guide U, having its lower edge projecting through the former, whereby an open annular space or combustion chamber is formed above the fire, as and for the purpose described.

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