

E. SMITH.
Magazine Stove.

No. 88,986.

Patented April 13, 1869.

Fig. 1.

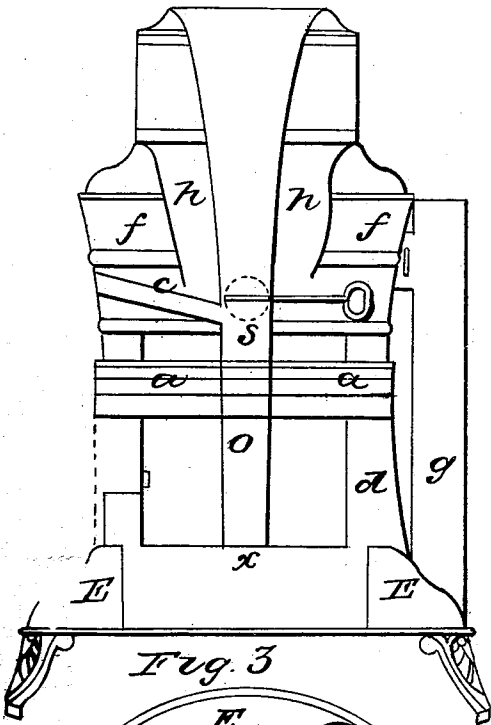


Fig. 2.

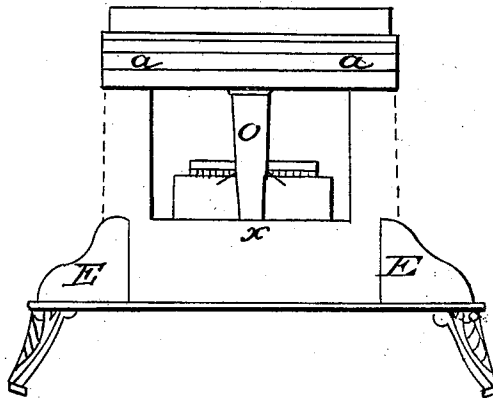


Fig. 3.

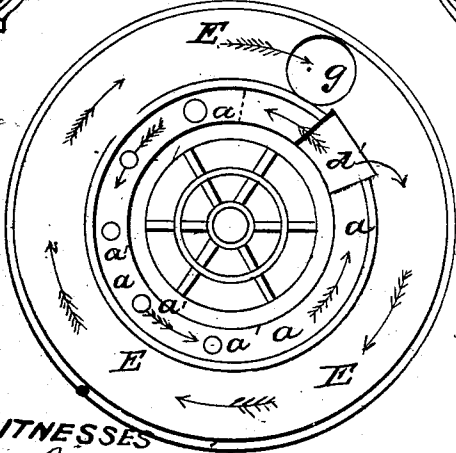
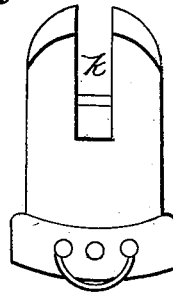


Fig. 4.



WITNESSES

Joel Tiffany
Daniel Ketchum

INVENTOR

Elihu Smith

UNITED STATES PATENT OFFICE.

ELIHU SMITH, OF ALBANY, NEW YORK.

BASE-BURNING STOVE.

Specification forming part of Letters Patent No. 88,986, dated April 13, 1869.

To all whom it may concern:

Be it known that I, ELIHU SMITH, of the city and county of Albany and State of New York, have invented a new and useful Improvement in the Flues of Heating-Stoves; and I hereby declare that the following is a full and accurate description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My said improvement consists principally in the application and combination of flues, both for conducting away to the exit-pipe the heated and escaping products of combustion, and also for conducting currents of air to be heated through a flue passing up from the open chamber in the bottom of the stove, through the ash-pit chamber, the fire-pot, and fire or combustion chamber, and the reservoir or supply-cylinder, in combination with the proper dampers or valves, by means of which these currents of air are directed, regulated, and controlled.

In the accompanying drawing, Figure 1 represents a vertical section of a heating-stove having my improvement in flues incorporated into its organization. Fig. 2 is a vertical sectional representation of the same stove from its upper annular flue down to the base and lower annular flue of the same. Fig. 3 is a horizontal view of said stove, or of so much of the same as is represented by the vertical section, Fig. 2, in said drawings. Fig. 4 is a representation of the ash drawer.

In Fig. 1, *a a* represent an annular flue, surrounding the fire-pot at its extreme upper edge, receiving the products of combustion over and all around the upper edge of the fire-pot, and passing thence downward through the main opening *d'* and the lesser openings *a' a'*, &c., into an annular flue immediately underneath, passing horizontally around the upper part of the fire-pot, and beneath the fire-chamber, until they reach the perpendicular flue *d*, and are thereby conducted into the lower annular flue *E E*, entirely below the ash-drawer and ash-chamber, and surrounding an open chamber in the bottom or extreme base of the stove. The products of combustion, after entering the lower annular flue *E E*, pass again around the base of the stove, below the ash-pit, until they reach the exit-pipe at *g*, when they escape to the chimney.

My flue for heating air and passing the same into the room is seen and represented at *o* and *c*. This flue is made rectangular at that part which passes through the ash-pit, for the purpose of easily fitting the ash-drawer to each side of the same. It is made cylindrical at that part of the same which passes through the fire-grate, for the purpose of enabling the grate to rotate about the same. This vertical hot-air flue communicates with the open space in the room through lateral branch flues, as represented at *c*, Fig. 1. These lateral flues pass from the main upright flue through the fire or combustion chamber, and through the outer casing of the stove into the room, for the purpose of discharging the heated air of the main flue lower down or nearer the floor than the top of the stove.

When it is desirable to discharge the heated air in the upper part of the room through the mouth of the flue at the top of the stove, the valve *s* in said flue is opened, as shown in the figure; but when it is desirable to discharge the heated air lower down in the room through the branch flue *c*, the valve *s* is closed, and the heated air is compelled to pass out through the lateral branch flues.

The arrows in Fig. 3 show the direction of the escaping products of combustion as they traverse the several horizontal annular flues on their way to the exit-pipe *g*.

In Fig. 1, *h h* represent the reservoir or coal-supply cylinder, and *f f* the combustion-chamber.

Having thus fully described my said improvement, and its organization in a heating stove or furnace, I will proceed to describe my claim.

1. I claim the annular horizontal flues *a a* and *E E* and their connecting-flue (perpendicular) *d*, in combination with a coal-supply heating stove or furnace, having a reservoir, *h h*, substantially in the manner and for the purpose above described.

2. I claim the perpendicular flue *o* and lateral flue *c*, in combination with the valve or damper *s*, for the purposes herein set forth.

ELIHU SMITH.

Witnesses:

JOEL TIFFANY,
DANIEL KETCHUM.