

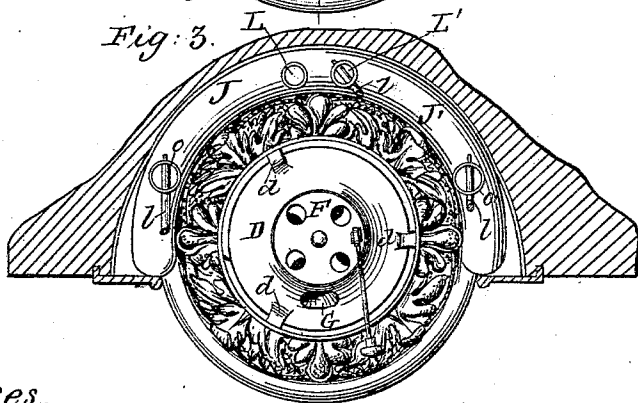
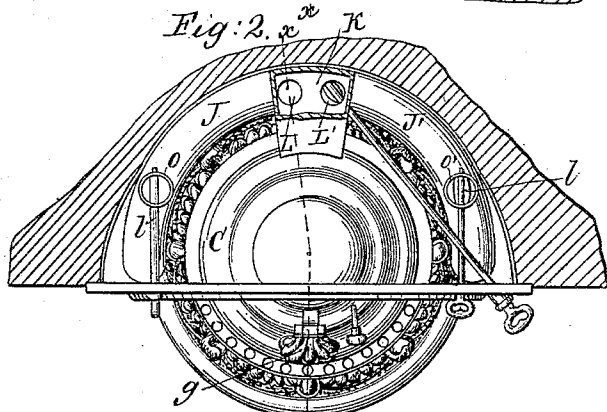
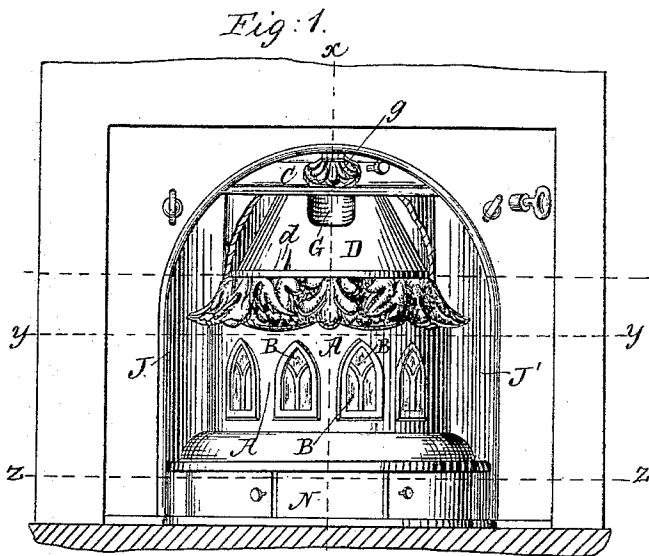
S. B. SEXTON.

2 Sheets—Sheet 1.

Base Burning Fire Place Stove.

No 101,385.

Patented March 29, 1870.



Witnesses.

W. B. Deming
Frederic White.

Inventor.

S. B. Sexton
by Knight Bros.
attorneys

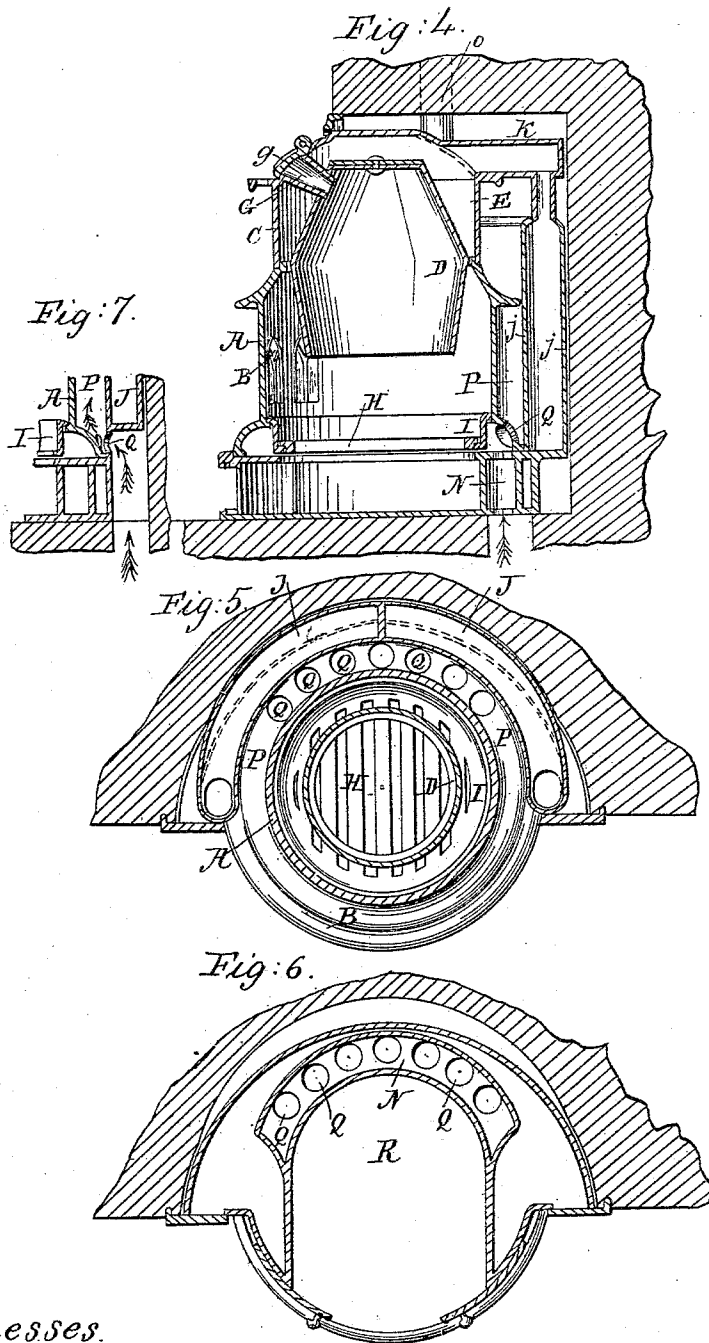
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by Hougholt
Attorney

United States Patent Office.

SAMUEL B. SEXTON, OF BALTIMORE, MARYLAND.

Letters Patent No. 101,385, dated March 29, 1870.

BASE-BURNING FIRE-PLACE STOVE.

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

I, SAMUEL B. SEXTON, of the city of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Fire-Place Stoves, which invention is described as follows.

Nature and Objects of the Invention.

My invention consists, first, in constructing a fire-place stove with flues of segmental or other suitable form, which may extend around or partly around the back and sides of the stove, and thus afford a much larger extent of heat-radiating surface than do the flue-pipes usually employed to carry the gaseous products of combustion to and from the base of the stove, avoid the unsightliness of said pipes, occupy less room, and operate in all respects with as good or better effect.

My invention consists, second, in constructing the magazine of a self-feeding or base-burning stove with its upper portion tapering upward, and providing it with a valve, or other outlet for gas, at top, and a separate aperture or conductor for introducing fuel at the front.

My invention consists, third, in a combination of a fire-chamber and an intervening air-space with radiating flues, arranged substantially as above set forth.

My invention consists, fourth, in an improved arrangement of dampers, for regulating the course of the gases for direct draught or for radiation.

General Description with Reference to the Drawings.

In the accompanying drawings—

Figure 1 is a front view, partly in section, of a base-burning fire-place stove, illustrating my invention.

Figure 2 is a plane or top view of the same, with the horizontal flue partly in section.

Figure 3 is a plan or top view thereof, with the cap of the combustion or gas-chamber removed to expose the magazine.

Figure 4 represents a vertical section in the planes indicated by the lines *x x* in figs. 1 and 2.

Figure 5 represents a horizontal section at *y y*, fig. 1.

Figure 6 represents a horizontal section at *z z*, fig. 1.

Figure 7 is a fragmentary section, illustrating a modification in the manner of admitting air to the heating-space, as hereinbefore described.

Similar letters of reference indicate corresponding parts in the several views.

A A represent the walls of the main combustion-chamber, the front of which may be provided with windows, *B*, for illumination.

The fuel-magazine *D* may be supported upon the walls *A*, at about its mid-height, either permanently or by lugs, *d d d*, (figs. 1 and 3,) which rest on the walls *A*, or on a ledge or projections thereon, in such a manner as to leave a space, to permit the products

of combustion to rise around the outside of the magazine into a chamber, *E*, within a cap, *C*, shown in section in figs. 1 and 4, which surmounts the magazine and forms the top of the combustion-chamber. This gas-space *E* is rendered more capacious by the tapering form of the upper part of the magazine.

At the top of the magazine is a valve or register, *F*, for the purpose of discharging into the flues any gas contained within the magazine, before opening the latter to receive a supply of fuel.

At or near the top of the magazine is an aperture to receive the fuel-conductor or chute *G*, the mouth of which is located in the top or front of the external cap *C*, and may be closed by a cover, *g*, of any suitable form.

The grate *H* and fire-pot *I* may be of common construction.

J J represent my improved radiating flues, formed of an inner sheet or plate, *j*, and an outer sheet or plate, *j'*. In the present illustration the said flues extend completely around the stove; but, if preferred, they may be separate, either with or without a space between them at the rear.

A horizontal flue, *K*, shown in section in figs. 2 and 4, conducts the gaseous products of combustion to the sheet-flues, with which it communicates through separate short flues or collars *L L'*, one for each of the said sheet-flues, and one of them provided with a damper, *l*, which is opened for direct draught, or closed to cause the gases to pass throughout the flues *J J'*, as hereinafter explained.

A chamber, *N*, in the base may be used to form a communication from one to the other of the flues *J J'*, and may be closed in front by a door on either side, in the usual way.

O represents a collar, for the attachment of the discharge-pipe, provided with a damper, *o*, as is usual. The location of this damper may be changed, if preferred.

To suit different arrangements of chimneys, and avoid the necessity for elbows and horizontal pipes, which are liable to clog and arrest the descent of soot, it is frequently desirable to place the exit-flue on the opposite side of the stove. For this purpose the collar for the discharge-pipe and its damper may be located as shown at *O'*, and the damper *l* changed from the flue *L'* to *L*.

The air to be heated may be admitted to the air-space *P*, between the fire-chamber *A* and the sheet-flues *J J'*, through holes *Q*, located either in the stove-bottom, and within the concavity of the sheet-flues, or else at back on the outer side of the smoke-flue in the base, and between it and the sheet-flues, as shown in fig. 7.

The ash-pit *R* may be furnished with a drawer or a

pan, and with sliding or other doors, of any suitable form.

Operation.

In starting the fire, the valve E and dampers *l* and *o* are all opened. When the fire is burning strongly and the magazine D supplied with coal, the valve F and damper *l* are closed. The fuel will then exhibit active combustion within the walls A and the windows B, and the gaseous products of combustion will pass upward around the outside of the magazine D, filling the chamber E above the same, from whence they will pass backward through the flues K L into the descending sheet-flue J, from the lower and front part of which they descend into the base-chamber N, within which they pass around the back of the stove, forward on the other side, and thence upward into the ascending sheet-flue J', from which they are discharged, through the collar O, into the exit-pipe, which is not here shown.

The location of the horizontal flue K at the back of the stove removes it out of the way of the workman in setting the stove, and affords better room for the adjustment of the discharge-pipe on the collar O.

While I have described the sheet-flues J J' as being two in number, and each formed between parallel plates or sheets of metal, I wish it distinctly understood that a single flue, properly partitioned, or a greater number may be used, and their sides may converge horizontally or vertically in either direction, as circumstances may render desirable. In some respects, an advantage will be derived by making them taper in width from the front backward, as shown by dotted lines in fig. 5, so as to admit of setting the stove further back in the fire-place, and also to cause the greater heating effect in front.

My improved sheet-flues combine the double purposes of radiators and case. When the case is of a single sheet the iron becomes very hot, and imparts heat to the wall or the back of the fire-place.

By my invention, the heat radiated from the body of the stove is prevented from passing through the casing. This effects a great saving of heat.

Another advantage of the invention is that it provides more certain and uniform means for heating the air, by reason of it being passed between two heating-surfaces.

The air-space P may be partially closed at top by a permanent or removable cover, so as to regulate, as required, the amount of heated air allowed to pass to the upper rooms.

From the above description it will be seen that in my present invention some valuable improvements are made upon the original invention, described in my patent granted on the 19th day of April, 1859, and subsequently reissued, while the most valuable features of the said original invention are retained.

I do not claim, under this application, novelty in the front top feed or chute, or circulation around the magazine, or the gas-escape therefrom, or in the sliding doors to the ash-chamber, because the said devices are shown in patents heretofore granted to me.

Claims.

The following is claimed as new:

1. In a fire-place stove the radiating flues J J', one or more, formed between plates or sheets, parallel or approximately parallel, either with or without the base-flue chamber N.
2. The sheet-flues J J', one or more, of segmental or analogous form, in combination with a fire-chamber, A, and an air-space, P, between the said flues and fire-chamber.
3. The magazine D, tapering upward from about its mid-height, and provided with a valve or outlet for the discharge of gas therefrom, and a separate feed-opening.
4. The arrangement of the dampers F and *l* as herein represented and described, for the purposes set forth.

SAMUEL B. SEXTON.

Witnesses:

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