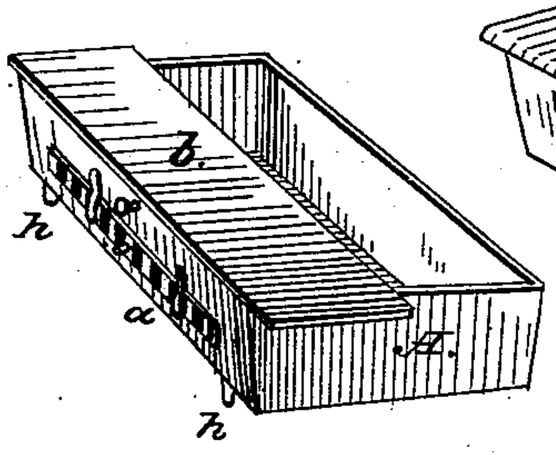
G. W. SWETT.

Cooking Stove.

No. 75,073. Patented March 3, 1868.

Fig. 2.



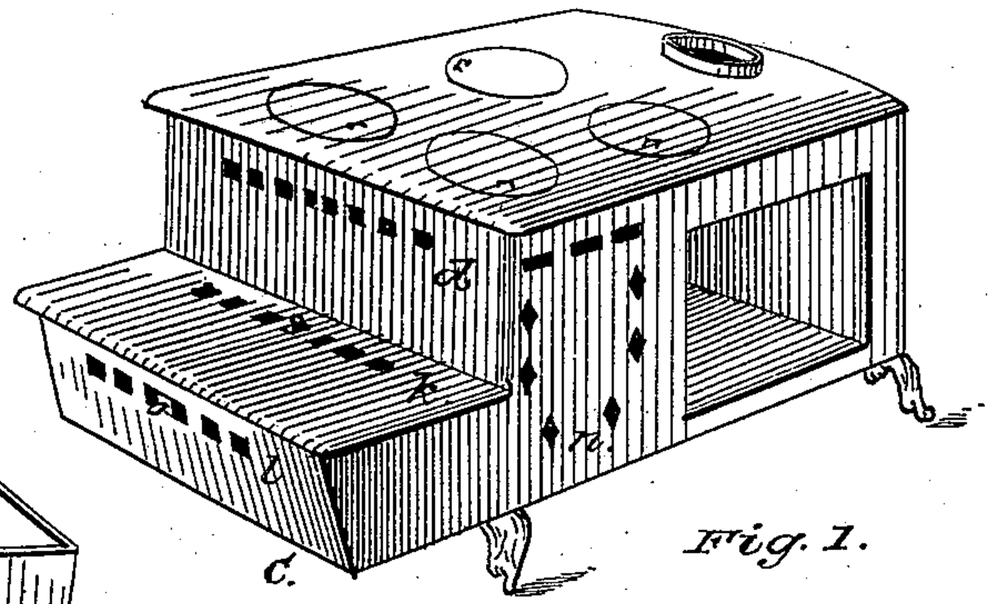


Fig. 1.

Fig. 3.

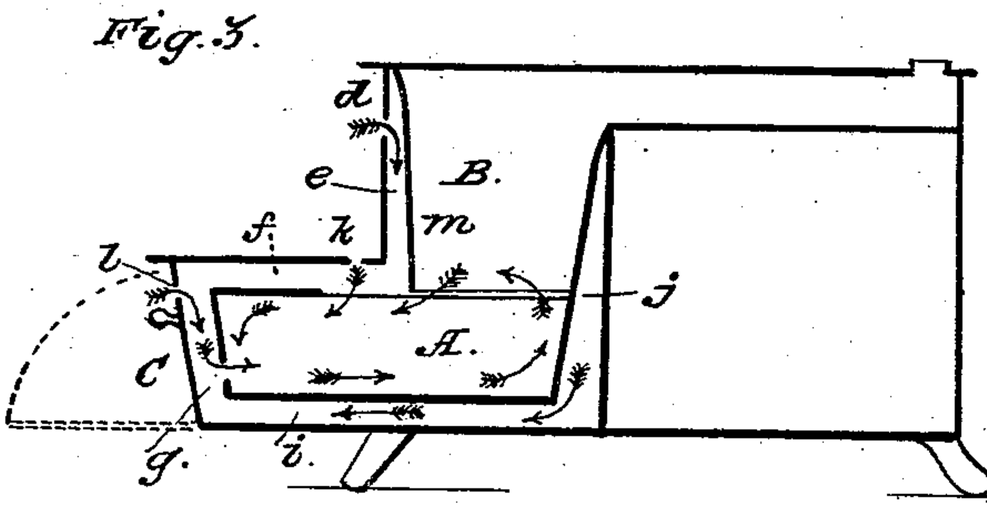


Fig. 4.

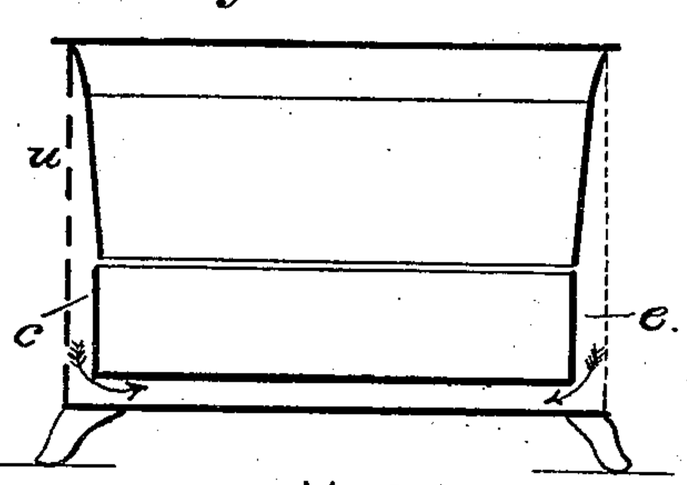


Fig. 5.

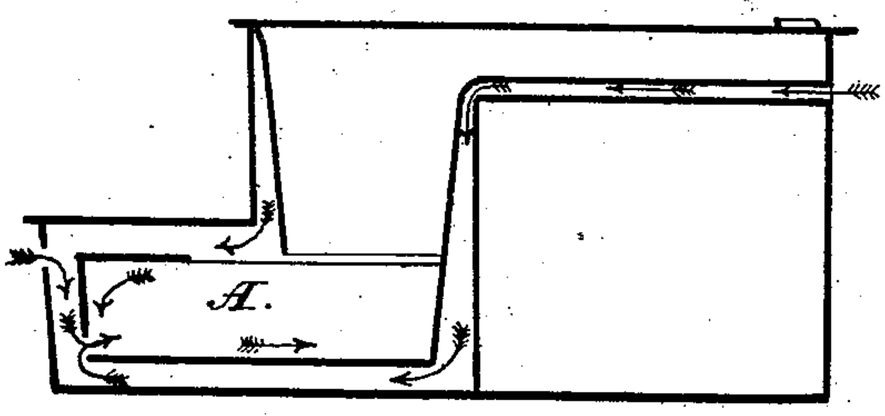


Fig. 6.

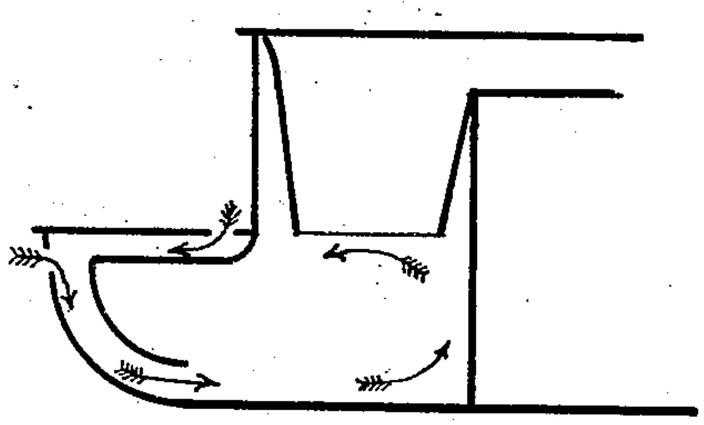


Fig. 7.

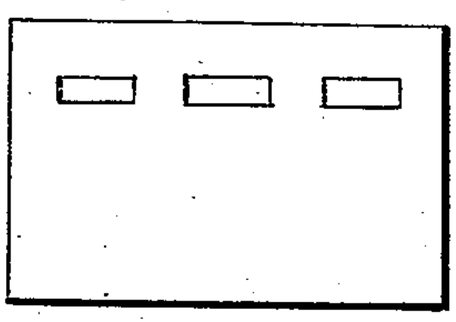
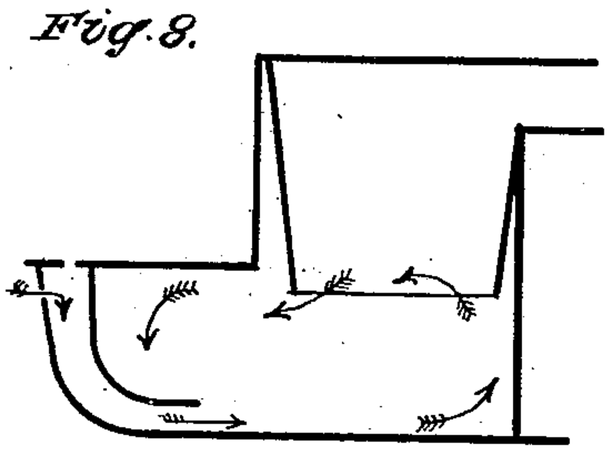


Fig. 8.



Witnesses.

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GEORGE W. SWETT OF TROY, NEW YORK.

Letters Patent No. 75,073, *dated March* 3, 1868.

IMPROVEMENT IN ASH-PANS OF COOKING-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 I, GEORGE W. SWETT, of the city of Troy, in the county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Cooking or other Stoves, Heaters, Furnaces, or Fire-Pots, or Fire-Chambers, wherever the same may be applied for the purposes hereinafter named and set forth; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being hereby had to the accompanying drawings, and to the letters of reference marked thereon, and which make a part of this specification.

Like letters represent and refer to like or corresponding parts.

Figure 1 is a perspective view of a cooking-stove containing my invention and improvements herein named and set forth.

Figure 2 represents a perspective view of the ash-pan drawer of my invention, and hereinafter fully described and set forth.

Figure 3 represents a vertical section on a line through the centre from front to rear.

Figure 4 represents a vertical cross-section, taken on a line through the fire-chamber, or chamber of combustion.

Figure 5 also represents a vertical section from front to rear, showing an air-flue over the top of the oven, and connected with air-flues in the front part of the stove, and described hereinafter.

Figure 6 represents a vertical section crosswise the fire-chamber or chambers of combustion, and of the ash-pit and hearth of the stove, as also does Figure 8, and are each for the purpose of showing the changes or different places or manner of admitting the air to the air-flues in the front part of the stove, and around and near to the fire-chamber, or chamber of combustion; and

Figure 7 shows a plate with damper-openings therein—

All of which figures, and the invention and improvements, and part or parts thereof, are hereinafter more fully described and set forth.

The nature of my invention and improvements consists in the employment of an ash-pan drawer arranged and combined with the hearth of any stove where the same may be applied, with flues or air-chambers surrounding the same for the purpose of admitting cold air, or air highly heated, as the case may require, to the fire in the fire-chamber, directly underneath the same, and through the fire-grate, in the manner and by the means substantially as herein described and set forth.

It also consists in the construction of an ash-pan drawer for stoves, substantially as shown at fig. 2, so that the same is entirely enclosed, excepting the damper-opening in front part and that part directly underneath the fire-grate, which is opened, so as to admit the material falling from the fire-grate above, thereby receiving the coal and ashes from the fire-chamber without any dust rising into the room when the same is in use, and the whole being so arranged underneath such fire-grate, and in the hearth or front of the cooking-stove, as to throw and circulate highly-heated air in that part of the stove for warming or baking purposes, and at the same time to promote or cause a slow but certain combustion of fuel in the fire-chamber, thereby greatly economizing in the use of fuel, and at the same time retaining all the heat arising therefrom, and so circulating and equalizing as to permit the use of any part of the stove for cooking, baking, or warming purposes, in the manner and by the means substantially as hereinafter described and set forth.

Having thus set forth the nature or main feature of my invention and improvements, and to enable others skilled in the art to which it relates to construct and to use the same, I will here proceed to describe the construction and operation thereof, which is as follows, to wit:

The oven and the surrounding or oven-flues of my said stove may be constructed in the usual and well-known manner, and of any size or capacity. The fire-chamber, or chamber of combustion, may also be contstructed in the usual way or manner. The outside plates of the stove may also be constructed in the usual way, and with such ornamental work or design as may be deemed best to use. The ash-pan drawer, A, is constructed substantially as shown at fig. 2 of the accompanying drawings. It may be of cast or sheet iron, in such form or shape as shall be suitable for the hearth of the stove where it is to be used. In the front part of said ash-pan drawer I construct the damper *a*, fig. 2, having a sliding cover of the usual construction, so

that the said damper-openings may be closed if found necessary so to do. The said damper may be arranged in any part of said front plate of said ash-pan deemed best. The front plate of said ash-pan drawer I cover with the plate *b*, same figure, which projects over the ends of said ash-pan drawer far enough to form the flue *c*, fig. 4, at each end thereof, and by means of which the said ash-pan is correctly put into proper place and position for use in the hearth of the stove. The said covering-plate *b* is for the purpose also of covering the front part of said drawer, so as to prevent the dust, ashes, or other material, which may come from the fire-grate into the rear part of such ash-pan, from passing into the flue surrounding the same, and thus and thereby prevent the escape thereof into the room or place where said stove is in use. And it also serves to direct the heated air which passes into the damper-opening *d*, figs. 1 and 3, down the flue-space *e*, and flue-space *f*, and flue-space *g*, same figure, and into the said damper *a* in the front part of said ash-pan drawer, and thus and thereby it forms the core or inner part necessary to construct the surrounding flues herein described and set forth. The said covering-plate *b* may be cast upon or with the box part of the said ash-pan drawer, or it may be cast and detached therefrom, and so combined with the top part thereof as to permit the use of the same for the purposes aforesaid. The ash-pan drawer stands or rests upon legs or downward projections *h*, fig. 2, on the front and rear part thereof, and thus is formed the bottom flue *i*, figs. 3, 4, and 5, and at same time the rear part of the said ash-pan drawer aids in the formation of the back flue *j*, figs. 3 and 5. It will now be seen that when said ash-pan drawer A is put within the hearth of the stove, and the rear part thereof underneath the fire-chamber, in the manner substantially as shown at figs. 3, 4, and 5, there are air-flues or spaces formed upon each side thereof, between the sides and the outer plates of the stove, substantially as shown at said figs. 3, 4, and 5, and which may be of any capacity required. Atmospheric air is admitted to these flue-spaces or chambers thus formed through and by means of dampers, substantially as shown in the drawings. If the air is admitted at damper *d*, figs. 1 and 3, then dampers *k* and *e*, same figures, will be closed, and then the said air becomes highly heated by coming into contact with the fire-chamber plate *m*, fig. 3, as it passes down the same into the flue *f*, and from thence into flue *g*, same figure, and from thence through damper *a* in the said ash-pan drawer, from which it is admitted into the fire in the fire-chamber B through the fire-grate for the promotion of combustion, while at the same time the entire outer plates of the hearth of the stove become highly heated, and, of course, radiate heat for warming, cooking, or baking purposes, thus adding greatly to the capacity of a cooking-stove, and at same time economizing in the consumption of fuel used. The atmospheric air may also be admitted to the aforesaid air-flues in the hearth of the stove through dampers *k* and *e*. When *k* is open, then *d* and *e* may be closed, or they may all be open at same time, and, of course, all admitting the air to said flues *e f g*, and into the fire through said ash-pan drawer, as aforesaid; or the atmospheric air may be admitted through openings *n* of suitable size in the side of the stove, as shown at figs. 1 and 4; or it may be admitted in the manner and form and by the means substantially as shown at figs. 6 and 8, whereby the air is thrown to the bottom of the chamber or space underneath the fire-chamber B, and thus and thereby it is caused to circulate and revolve, as indicated by the arrows. In each figure of the accompanying drawings the arrows represent and indicate the direction, current, and circulation of the atmospheric air when admitted to said flues in the manner substantially as aforesaid. The plate *c* in front of the ash-pan drawer A, figs. 1, 3, and 5, may be hinged at the lower edge thereof, so as to allow said ash-pan to be removed from the hearth of the stove and returned thereto whenever necessary, and at same time to close the same therein closely, so as to retain the circulation of the air, as well as to prevent dust from rising in the room or space where the stove is being used.

The oven and surrounding flues of my said stove, as well as exit-pipe and other parts thereof not herein mentioned, may be constructed in the usual form or manner, my improvements relating mainly to the hearth of the stove, and to the ash-pan drawer therein, substantially as hereinbefore described and set forth.

Having thus described my invention and improvements, what I claim as of my invention, and desire to secure by Letters Patent of the United States of America, is—

1. I claim the ash-pan drawer A, having the rear part thereof extending under the fire-chamber, so constructed as to receive the ashes or other matter falling from the combustion-chamber while the front part of the top thereof is closed, and the whole arranged and combined in the manner substantially as herein described and set forth.

2. I claim the combination of the ash-pan drawer A, or its equivalent, with the fire-chamber or chamber of combustion B, and so arranged in the hearth of a stove as to form the air-flues or chambers *f*, *g*, *i*, and *j*, in the manner and for the purposes substantially as herein described and set forth.

3. I claim constructing the hearth of a stove with dampers and a flue or flues therein for the purpose of conducting atmospheric air from the room, or place where the stove is used, into the said ash-pan drawer A, and to the bottom of the said hearth, substantially as herein described and set forth.

In testimony whereof, I have hereunto set my hand, this 30th day of October, A. D. 1867.

GEORGE W. SWETT.

Witnesses:

CHARLES D. KELLUM,

JOHN T. LAMPORT.