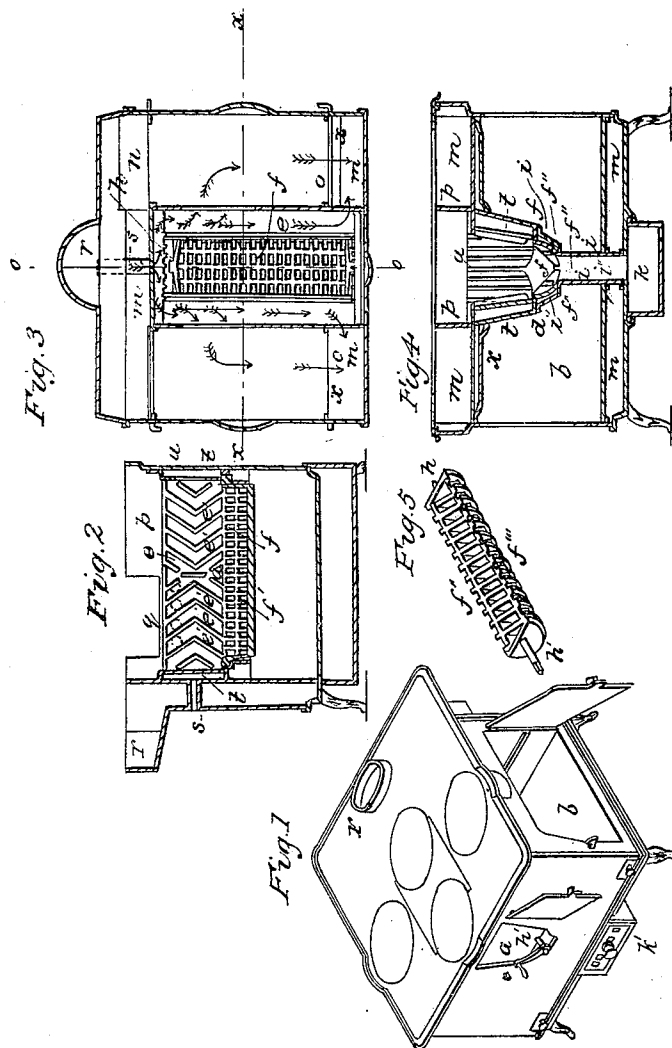


W. WHEELER.  
Cooking Stove.

No. 6,719.

Patented Sept. 18, 1849.



# UNITED STATES PATENT OFFICE.

WILLIAM WHEELER, OF TROY, NEW YORK.

## COOKING-STOVE.

Specification of Letters Patent No. 6,719, dated September 18, 1849.

*To all whom it may concern:*

Be it known that I, WILLIAM WHEELER, of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Cooking-Stoves, and that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known and of the usual manner of making, modifying, and using the same, reference being had to the accompanying drawings, which make a part thereof, in which—

Figure 1, is a perspective view. Fig. 2, is a vertical section longitudinally through the fire chamber. Fig. 3, is a horizontal section. Fig. 4 is a vertical cross section. Fig. 5 shows the grate separate.

The nature of my invention consists in the mode of constructing the fire chamber, grate, and ash-pit, and in combining two ovens therewith, by which I can economize heat, and can cook a great variety within the ordinary space allotted to the purpose.

The stove is constructed in the following way; but I do not confine myself to any proportions, but vary the same according to circumstances, while I retain the features hereafter described. The outside of the stove is nearly cubical, and it is elevated in the usual way, on legs; the fire chamber (*a*,) is equidistant from each end, and is placed between two ovens (*b*, *b*,) and extending from near the back to the front, as clearly shown in Fig. 2, leaving only a space sufficient for a double flue behind, to be presently described. The sides of the fire chamber are vertical or inclined and there is a narrow air space (*t*,) between it and the oven; on a level with the top of the grate there is a ledge or projection (*d*,) inward, sufficiently deep to support a fire arch, or lining (*e*,), a front view of which is shown in Fig. 2. The grate (*f*,) occupies and fills a narrow space in a frame (*f'*,) that rests on the projection (*d*,); this grate consists of a series of bars or plates, having a V shaped indentation on the upper side, and with their under side formed into the segment of a circle, as clearly represented at Fig. 4, and on an enlarged scale Fig. 5, these grate bars are connected by the bars (*f''*,) that extend from end to end, and placed a little within the ends of the grate bars, so as to admit a current of air to pass up outside of them next to the side of the recess.

The grate thus constructed is suspended in its place on journals (*h*, *h'*,) projecting from each end at the center of the circle, of which the lower surface of the grate bars form a segment, so that when the grate is shaken the bars will always form a joint with the space in which it is located; this space (*i*,) contacts upon the sides of the grate, and then the sides (*i*, *i*,) composed of single plates, descend perpendicular to the bottom of the stove between the ovens; an opening is made through the bottom of the stove, corresponding in size with the space (*i''*,), and below it there is an ash drawer (*k*,), in the front of which a lattice damper (*k'*,) is fixed.

The ovens (*b*, *b*,) are situated as before named, at each side of the fire place, with their doors at each end; a flue (*m*, *m*, *m*, *m*,) surrounds the top, front, back, and bottom of each of these ovens, and the direction of the draft is regulated by a damper (*n*, *n*,) over each oven, opening into the back flue; and two others (*o*, *o*,) that open into the front flue; a partition (*p*, *p*,) rises from the top of the oven to the top of the stove on each side of the fire chamber, that extends from the front plate of the stove, back a sufficient distance to leave only a proper opening for the escape draft at (*q*, *q*,). With the back dampers both closed, and the front ones open, the course of the draft will be through the openings (*q*,) on to the oven top, thence forward in the direction of the arrows down through the front dampers and front flue to the bottom, thence under the bottom and up the back flues to the pipe at (*r*,) (Figs. 1, and 3,); if both the back dampers are open, the draft passes directly off through them to the pipe; by closing both the rear dampers, and one of the front ones, the whole heat is turned on to the oven on the opposite side. A tube (*s*,) passes through the back of the stove and back flue, opening a communication between the external air and a space (*t*,) surrounding the fire arch; the air in this space receives the direct heat radiated from the fire; and after it is heated it passes off through lateral openings (*u*,) into the front descending flues to convey additional heat to the bottom of the oven. I also form an air space *v* see Fig. 4 between the top of each of the ovens and the upper flues, into which I admit a portion of the air from the space (*t*,) through small apertures, shown by dotted lines at (*w*,) Fig.

2 behind the fire arch; another opening at  
 (x,) into the front, descending flue, serves to  
 keep up the circulation of the air, the course  
 of which is indicated by the red arrows in  
 5 Fig. 3 by this construction and arrangement  
 all the surplus heat is conveyed from a point  
 where it is not only not needed, but is ab-  
 solutely injurious, to the bottom and other  
 10 parts of the ovens, so as to disseminate the  
 heat, and cause the ovens to bake equally.  
 One of the journals (*h'*.) of the grate ex-  
 tends out toward the front door of the stove,  
 and is made square for a wrench to fit, by  
 15 which the grate can be shaken. The grate,  
 by its figure inside, concentrates the coals  
 toward its center when the fire is low, and  
 the connecting bars (*f'*.) being placed with-  
 in the ends of the cross bars, the air has a  
 free circulation outside of them; thus are  
 20 they prevented from clogging or melting.  
 The fire arch is composed of separate plates,  
 having on their face next the fire diagonal  
 projections, so arranged as to keep the coal  
 or other fuel from coming in contact with  
 25 the plate; they also form channels for the  
 admission of air by which the outside of  
 the fire and plates of the fire arch are kept  
 free from ashes, cinders, &c., and in a glow-  
 ing state, without any impediment to radi-  
 30 ating heat, and producing a greater and  
 more perfect combustion; by this arrange-  
 ment the use of fire brick is superseded and  
 the quantity of coal consumed in proportion  
 to the effect produced is much less than  
 35 when fire bricks are employed. It is obvious  
 that many changes can be made in the form  
 and details, without altering the general  
 principles of this part of the stove. The  
 angular channels (*e'*.) running obliquely  
 40 upward in the direction of the draft, there  
 being a channel opposite each opening,

through the grate, which conveys a supply  
 of air up into the coal on the side, while  
 the projecting ribs keep the coal off from  
 the main surface of the sides, and free from  
 45 ashes, so as to radiate all its heat for heating  
 the air in the chamber (*t*.) behind the fire  
 arch.

Having thus fully described my improved  
 stove, what I claim therein as new, and for  
 50 which I desire to secure Letters Patent, is—

1. The contracted opening in which the  
 fire grate is situated, extending down  
 through the bottom of the stove, in part un-  
 der the grate and permitting the ovens to  
 55 be enlarged at that point through which  
 the ashes is discharged and air supplied for  
 combustion, and forming a heated chamber,  
 by which a greater heat is given to the oven  
 quite to the bottom of the stove. 60

2. I claim the fire arch, plates with their  
 overhanging projections or ledges forming  
 diagonal channels so constructed as to pre-  
 vent clogging with ashes, and admitting air  
 on the sides, as set forth. 65

3. I claim the combination of the grate,  
 and its frame, constructed substantially as  
 described, having an angular depression on  
 the upper surface of the grate and a seg-  
 mental curvature on the underside combined  
 70 with the fire arch, as above set forth, and  
 with the connecting bars placed within the  
 ends of the cross bars of the grate to com-  
 plete the draft.

4. The combination of the air passages  
 75 *t* &c. with the center fire arch and oven flues,  
 substantially in the manner and for the pur-  
 pose herein above described.

WILLIAM WHEELER.

Witnesses:

J. J. GREENOUGH,  
 WM. GREENOUGH.