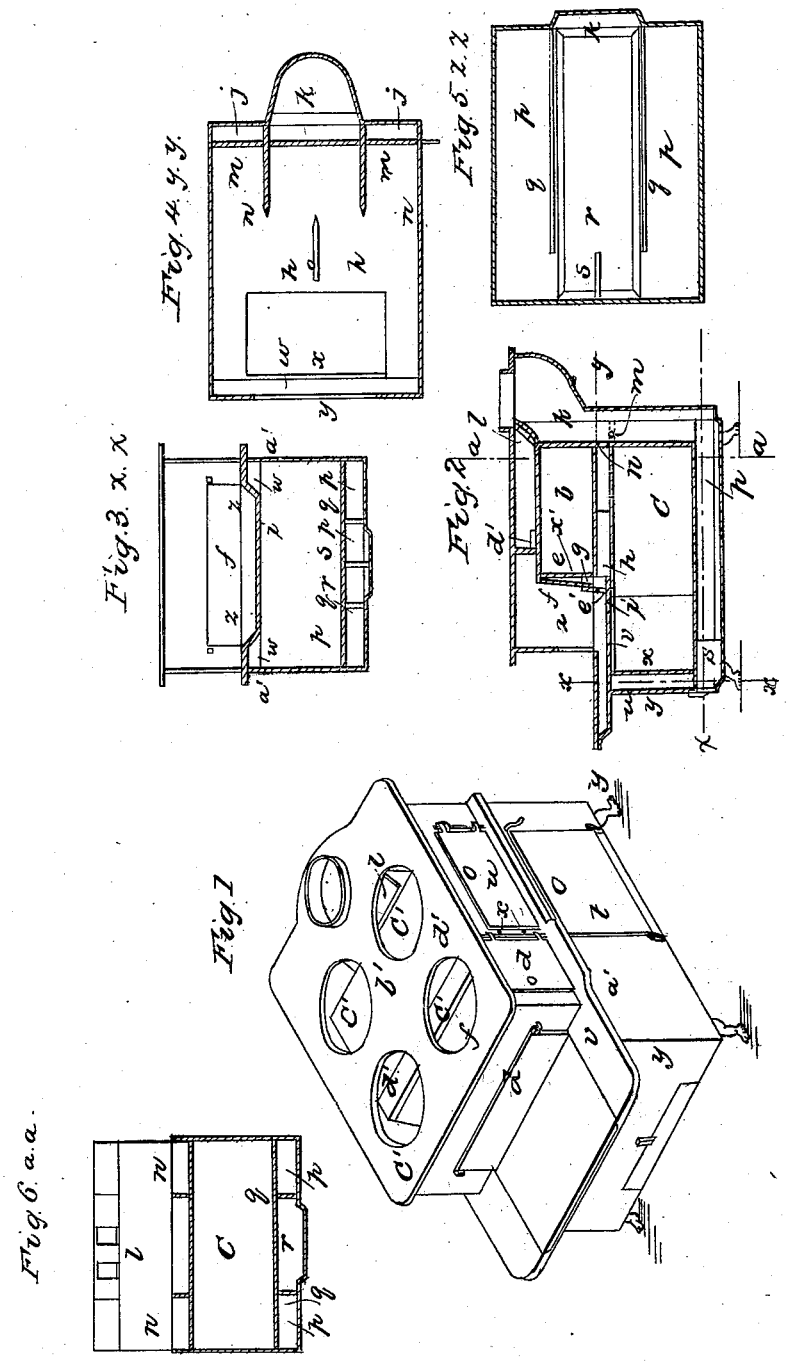
P. WHITESIDE.

Cooking Stove.

No. 5,258. Patented Aug. 28, 1847.



N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

P. WHITESIDE, OF WEEDSPORT, NEW YORK.

COOKING-STOVE.

Specification of Letters Patent No. 5,258, dated August 28, 1847.

To all whom it may concern:

Be it known that I, P. WHITESIDE, of Weedsport, in the county of Cayuga and State of New York, have invented 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 it from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of the improved stove; Fig. 2, a longitudinal vertical section; Fig. 3, a cross vertical section at the line (X X) of Fig. 2; Fig. 4 a horizontal section taken at the line (*y*, *y*) of Fig. 2; Fig. 5 a horizontal section taken at the line (Z, Z) of the same figure, and Fig. 6 a cross section at the line *a*, *a*, of Fig. 2.

The same letters indicate like parts in all the figures.

My improvements are applied to that class of cooking stoves in which the fire chamber is placed in front of a small oven and above the main oven. The first part of my invention consists in combining with the diving flues which conduct the draft to the flues below the main oven a set of flues between the two ovens, and a set of dampers in the diving flues by means of which, when the said dampers are closed the draft will pass over a small oven, down two diving flues in the back, along two side horizontal flues between the two ovens and then along a central flue back to a vertical flue at the back, and between the two diving flues, by means of which combination and arrangement the small top oven can be used with a small expenditure of fuel when it is not necessary to use the large oven, particularly for summer use, when it is desirable to heat the room as little as possible.

The second part of my invention consists in introducing a short partition at the forward end of the return horizontal flue, below the main oven, and also below the small top oven to turn the currents of heated air and products of combustion, as they enter the return flue, and before they unite in the main return flue; stoves of this class, in which the length of flues is very great, much inconvenience has been met with in obtaining the requisite draft, in fact such stoves have heretofore only answered with chimneys of strong draft; the cause of this difficulty is that as the products of combustion leave the two side horizontal flues to turn into the main return flue the two currents meet and oppose each other and hence form eddies instead of running together toward the exit pipe; but by introducing a partition at the commencement of this return flue the two currents turn into it independently of each other and without obstruction, uniting after they have taken the direction toward the exit pipe.

And the third part of my invention consists of a close hot air chamber in front of the main oven, which extends to and is heated by the hearth and bottom plate of the fire chamber, for the purpose of retaining the heat in the front of the oven.

In the accompanying drawings (*a*) represents the fire chamber placed in front of a small oven (*b*) and above the main oven (*c*). This fire chamber is provided with a door (*d*) at the front and one at the sides. The small oven (*b*) is separated from the fire chamber by two plates (*e*, *f*) with a space (*g*) between them, forming an air chamber to protect the front of the oven from the intensity of the fire; and this space opens into the return horizontal flue (*h*) below this oven, so that the air, which enters the space through holes (*x'*) in the ends, after being highly heated, escapes through this return flue into the exit pipe to increase the draft by heating the smoke and other products of combustion when passing up, after their circuit around the main oven. And for the purpose of cleaning out the flues below the top oven the opening left between the lower edge of the fire back and the hearth plate (*i*) is provided with a movable piece (*e'*) which can be removed at any time to give access to the flues. The back of the oven is divided into three flues (*j*, *j*) and (*k*), the two former being the diving flues and the latter the exit pipe. The draft from the fireplace can be carried directly out into the exit pipe, when it is not desired to heat the ovens, by opening a damper (*l*), or by closing it the draft will be divided and descend in the two diving flues. When the small top oven alone is to be heated, two dampers (*m*, *m*) placed in the two diving flues on a level with the top plate of the bottom oven, are turned down, which close the diving flues below this line, and open two apertures that lead the draft into

two side horizontal flues (*n*, *n*) between the two ovens, along these to the end of the two partitions that separate these from the return flue (*h*) into which they turn separately in consequence of the interposition of the short partition (*o*), at the end of which the two currents unite on their way to the exit pipe (*k*) to equalize the heat under the oven, for without this the oven would be unequally heated should the draft in one flue preponderate.

When the dampers (*m*, *m*) are thrown up the draft passes down to and through two horizontal flues (*p*, *p*) under the bottom oven and to the forward end where the two currents pass around the ends of the two partion plates (*q*, *q*) and are both deflected and turned into the main return flue (*r*) by the partition (*s*), after passing which the two currents unite on their way to the vertical exit pipe (*k*) in the same manner as under the top oven.

The bottom oven is provided with doors (*t*, *t*) at the ends and the top oven is also provided with end doors (*u*, *u*). The bottom oven extends under the hearth (*v*) and is provided with a tight hot air chamber (*w*) between the end plate (*x*) of the oven and the outside plate (*y*) of the stove; and this chamber extends horizontally at the sides between the top of the oven and the hearth-plate (*v*) which is sunken as at (*z*, *z*), the inclined sides of the sunken hearth and the side plates (*a'*, *a'*) of the stove forming the sides of the horizontal extension of the hot air chamber (*w*). By this arrangement the air in this chamber is heated by the hearth plate, the upper part of the bottom oven being protected from the too intense heat of the fire by the ashes in the sunken part of the hearth, and by the interposition of the horizontal parts of the hot air chamber. The top (*b'*) of the stove is provided with boiler holes (*c'*, *c'*, *c'*, *c'*) in the usual manner, and back of the fire back and between the top of the top oven and the top plate (*b'*) there are two dampers (*d'*, *d'*) by means of which the draft can be directed under either set of boilers at discretion.

It will be obvious that the partition at the end of each of the return flues that turn the currents of smoke, &c., can be varied in length at the discretion of the constructor; but the shorter they are made the better, so long as they extend sufficiently far to prevent the two currents from uniting before they have taken the direction of the return flue.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The diving flues at the back in combination with the horizontal flues between the top and bottom ovens, and the two dampers in the diving flues, substantially as described, whereby the draft can be carried under the top oven, independently of heating the lower oven, when it is desired to use the top oven alone, as described.

2. The placing a partition in the main return flue to turn the draft from the two side flues, and prevent them from acting against each other, or uniting to impede the draft until after they have been thrown in the direction of the main return flue, substantially as described.

P. WHITESIDE.

Witnesses:
A. P. BROWNE,
J. J. GRUNOUGH.