

J. B. WILKINSON.

2 Sheets—Sheet 1.

Cooking Stove.

No. 104,807.

Patented June 28, 1870.

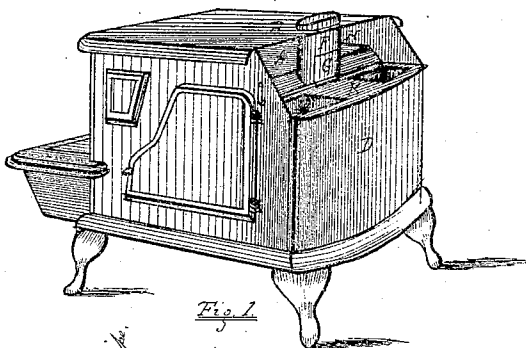


Fig. 1

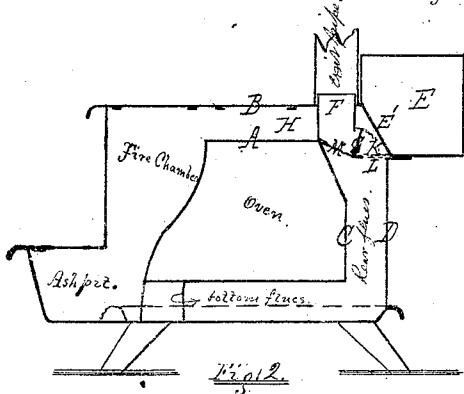


Fig. 2

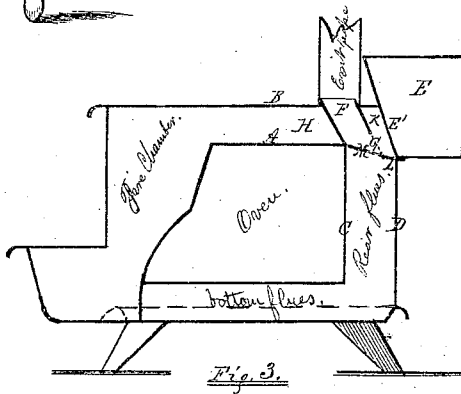


Fig. 3

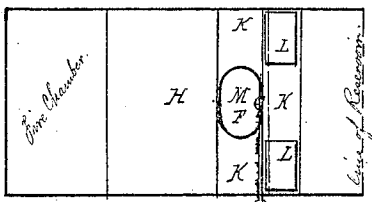


Fig. 4

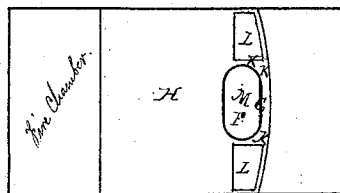


Fig. 5

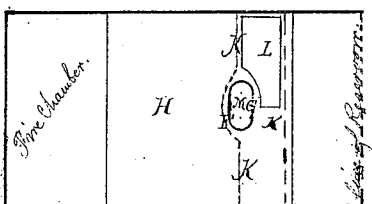


Fig. 6

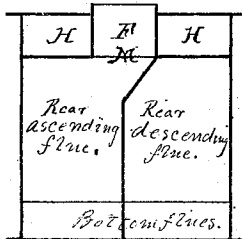


Fig. 7

Witnesses.

R. H. Reille
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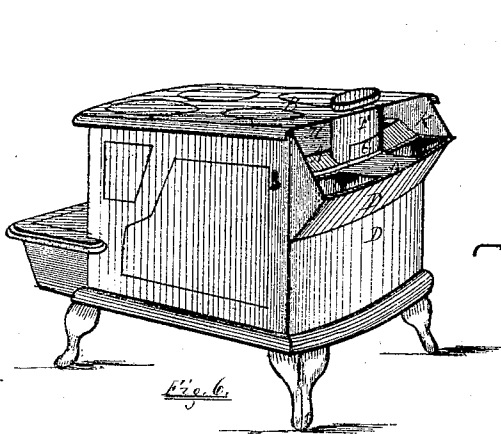


Fig. 6.

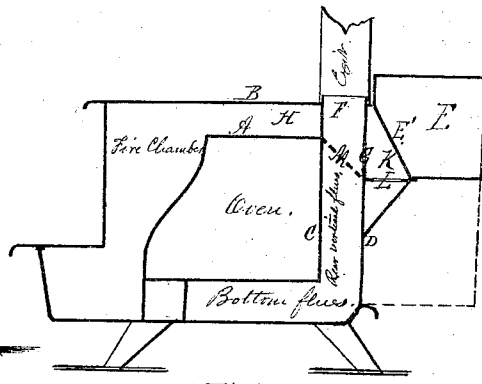


Fig. 7.

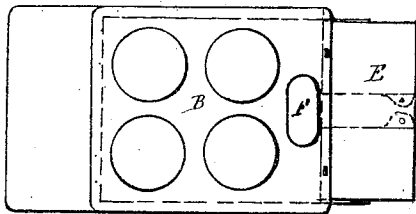


Fig. 8.

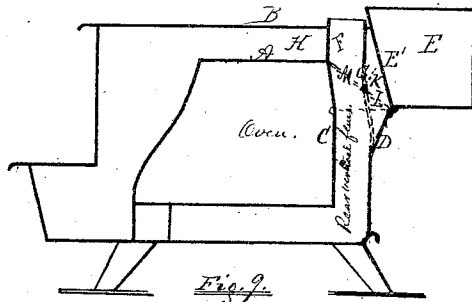


Fig. 9.

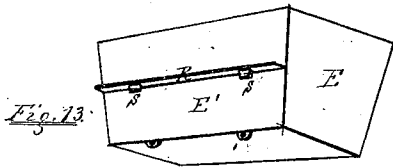


Fig. 10.

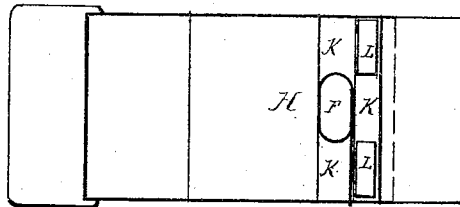


Fig. 11.

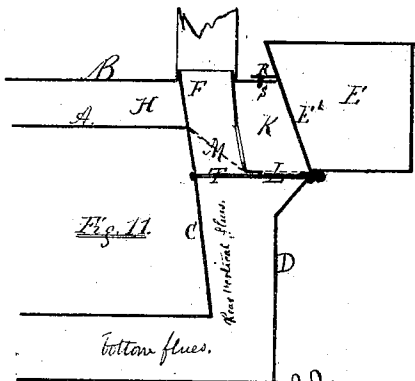


Fig. 12.

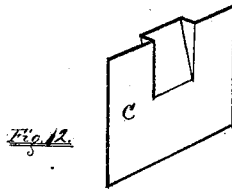


Fig. 13.

Witnesses

Wm. Keille
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United States Patent Office.

JOSEPH B. WILKINSON, OF TROY, NEW YORK.

Letters Patent No. 104,807, dated June 28, 1870.

COOKING-STOVE.

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

I, JOSEPH B. WILKINSON, of the city of Troy, county of Rensselaer and State of New York, have invented certain Improvements in Cooking-Stoves, of which the following is a specification.

The nature of my invention consists in the extension backward of the sheet-flue, always situated above the oven and below the top plate of the stove. Said sheet-flue has heretofore ended with the front line of the back vertical flues of the stove.

These back flues in my stove are discontinued and not carried up above the top plate of the oven, so that whether the stove be one having two vertical back flues, or one having three back vertical flues, there are no descending flues above the line of the top oven plate.

The top oven plate covers all the back vertical flues, whether one or more, and the space above the top plate of the oven, and between it and the top plate of the stove, and from side to side or jamb to jamb of the stove, and from the back of stove to front, becomes one broad sheet-flue; and the part or portion thereof back of the line of the back plate of the oven, or back of the usual limit or back line of the sheet-flue, as formerly used, is the extension which I claim as new, and as my invention.

The extending of the top oven-plate over and beyond the back vertical flues of the stove, being the subject of a former patent, is not claimed in this.

The nature of my invention also consists in placing a pipe-collar upon the said top oven-plate of the stove, extending the same upward through an aperture in the top plate of the stove, fitting tightly, and sufficiently above said top plate to permit the placing of the exit-pipe or stove-pipe thereon.

The said pipe-collar may be cast or constructed as a part of the top oven-plate, if required.

It also consists in having a damper, or its equivalent, situated at the back of said pipe-collar, covering an opening therein, so that the escaping products of combustion may be permitted to enter said pipe-collar from the above-mentioned extended flue-space, and pass off to the exit-pipe, when necessary.

At the back of my stove I place a water-reservoir or tank.

The extended flue-space above mentioned reaches backward to the front wall of the reservoir or tank, so that an open space is formed all along the front wall of the said reservoir or tank, and from the top oven-plate upward to the top plate of the stove.

There being no back plate at this place in a stove of my construction, the reservoir or tank forms the back of the extended sheet-flue above described.

And the object of the extended flue-space is, so that the products of combustion, heat, &c., may pass

freely along the entire front of the reservoir or tank so that water therein may be heated for culinary purposes.

The object of the pipe-collar extending from the top oven-plate upward, and resting thereon, is so that the products of combustion, smoke, &c., in escaping from the ascending flue of the stove, which is situated below the top oven-plate extended, may pass upward to the exit-pipe or stove-pipe without obstructing the free circulation of heat, &c., around in the extended sheet-flue above described, the shape or form of the pipe-collar being the best thing for the purpose, as it takes up but little space.

It may also be considered as an extension downward of the exit-pipe or stove-pipe, as I usually construct it of same size and shape. In that case it would be as if the stove-pipe passed downward through an aperture in the top plate of the stove to the top plate of the oven extended, and resting on said top oven-plate.

The said pipe-collar may be of any suitable material for the purpose required.

The construction of the damper mentioned above permits a direct draught to be used without in any way using the return flues of the stove at the back or bottom, and by means of apertures through the top oven-plate extension the products of combustion (when the pipe-collar damper is closed) are passed downward out of and from said extended sheet-flue into the rear vertical descending flue or flues of the stove, through the same to the bottom flues of the stove, and return in the usual manner.

The extended top plate of the oven, or the equivalent thereof, and the construction of the reservoir or tank, and placing of the same, and also the apertures through the said extended top oven-plate, are all covered by a former application for which Letters Patent were granted, and consequently are not claimed in this application; but the invention herein described and claimed is found of great importance in perfecting and rendering complete those claimed before, the stove, as perfected, being one of the most complete, economical, and useful ever constructed. It is also, by these means, rendered one of the cheapest on sale of any offered to the public.

The nature of my invention also consists in constructing a flange along the front of the reservoir or tank, to cover the joint or crack which might happen between the wall of the reservoir and top plate of the stove; and also under this flange, extending downward therefrom, I cast pins or lugs, so that when the reservoir is in position the said pins or lugs can pass through corresponding holes in and through the top plate of the stove, the object being to keep the reser-

voir from any tendency to slide backward horizontally away from its junction or contact with the top plate of the stove.

The lugs or pins may be cast to the front of the reservoir without the flange, if necessary, but the flange is useful in covering the joint, as above mentioned.

It also consists in the application of bolts or pins passing through the rear vertical back plate of the stove, across the rear vertical flues, and either through or strongly attached to the back plate of the oven, and the outer end or head attached to, in a suitable manner, the reservoir, so that the whole reservoir and stove-plates may be screwed or bolted up tightly together, thereby making close and air-tight joints, the object being to perfectly join the points of contact, and to firmly hold the plates together, and also to prevent the escape of deleterious gases into the room within which the stove may be placed.

Another benefit to be derived from the construction of the extended top oven-plate, pipe-collar, and extended flue-space, above mentioned, is, that the heat is concentrated first against the reservoir before entering the rear vertical flues of the stove, and again it is strongly concentrated at the upper back corner of the oven, imparting intense heat to the oven at that point, and here it is needed and highly beneficial.

Fresh or cold water may be supplied to the reservoir at any time without in any way affecting the temperature within the oven, and baking processes carried on perfectly, while water is freely used from the reservoir, and fresh water added without in any way interfering with the oven. This is not the case with stoves having reservoirs as heretofore used. The oven in their case is sometimes cooled off so rapidly as to injure articles undergoing the usual processes within the oven.

And still another useful feature derived from my manner of construction is, that the reservoir may be heated by direct draught, water boiled therein, if necessary, and, in this case, utilizing the first heat of the stove, as, when kindling the fire, wood is used, and a direct draught needed, the great heat given off by the burning wood and kindlings commences to heat the reservoir as soon as fire is applied, and when the damper is shut and return or reversed draught used, the water within the reservoir is kept at a proper degree of temperature, and more perfectly regulated than in the ordinary modes of construction.

The invention and improvements herein described may be applied to any stove usually made, having ascending and descending-flues, whether what is technically styled a two-flue, or what is so called a three-flue stove, with either mode of construction, it works satisfactorily and is highly beneficial.

Description of the Accompanying Drawing.

Figure 1 is a perspective of the stove from the rear, with reservoir removed, and showing extended sheet-flue and pipe-collar. The space at the back left open is covered by the reservoir when in position.

Figure 2 is a lengthwise vertical section of the same construction, with reservoir.

Figure 3 is a lengthwise vertical section of the stove, similar, but having the pipe-collar slanting forward.

Figure 4 is a horizontal section above the oven, and corresponding with the construction in fig. 1.

Figure 5 is a horizontal section above the oven, corresponding with fig. 3.

Figure 6 is a perspective of a stove, similar to fig. 1, but having the sheet-flue extended further back, so that it passes over and beyond the back vertical flues, and also back of the vertical line of the back plate of the stove, which is carried out back at the top, for the purpose.

Figure 7 is a lengthwise vertical section of the same construction.

Figure 8 is a horizontal section of the same above the oven.

Figure 9 is a lengthwise vertical section of a similar stove, but having the reservoir set well down, the back oven-plate bent slightly forward, and the back plate of the stove bent but slightly backward.

Figure 10 is a horizontal section above the oven, corresponding therewith.

Figure 11 is a lengthwise vertical section of the back part of the stove, enlarged, so as to show the nibs or pins on the reservoir, and the bolts at the back of the stove.

Figure 12 is a perspective of the back oven-plate, to correspond with fig. 11.

Figure 13 is a perspective of the reservoir, showing the flange, nibs or pins, bolts, &c.

There are two sheets of drawing accompanying this specification, marked respectively Sheet I and Sheet II.

Arrows show the direction of the different currents. Like letters refer to like or corresponding parts.

General Description.

A is the top oven plate;
B is the top plate of the stove;
C is the back oven-plate; and
D is the back plate of the stove.
E is the reservoir;
E', the front wall or plate of the reservoir;
F is the pipe-collar;
G is the damper;
H is the sheet-flue above the oven; and
K is the extension of said sheet-flue.

L L are the apertures through the top oven-plate A, by means of which the products of combustion pass, before entering the rear or back vertical flues of the stove, to descend to the bottom of the oven.

There is also an aperture in the top oven-plate at M, situated at the top or upper end of the rear ascending-flue, and through this aperture the products of combustion pass, before entering the pipe-collar F, in their escape to the exit-pipe or stove-pipe.

It will be seen that when the pipe-collar is removed from the stove, there is a clear, open, and unobstructed sheet-flue or space above the oven of the stove, and over the back or rear vertical flues, and reaching entirely back to the front wall E' of the reservoir, and it may be continued further back, if deemed best, and used for the same or similar purposes, and when the pipe-collar F is in position, then that forms the only obstruction.

All around it and behind it is the extension of the broad sheet-flue H, the extended part marked K.

The pipe-collar F may be constructed small, so as to take up but little of what would be otherwise open space, and a great gain is effected in concentrating the heat within the ascending-flue of the stove, before it enters the pipe-collar F, imparting heat to the oven, and also in retarding the products of combustion and extracting all the heat that would otherwise be wasted by too rapid escape to the exit-pipe; and, again, by covering the descending vertical flues of the stove, and only admitting the products of combustion through apertures of a suitable size, another gain is effected at this point, in concentrating the products of combustion within the extended sheet-flue space-K, so as to impart a great heat to the reservoir, making it an easy matter to heat water within. The heat also being saved greatly at this point, causes a saving of fuel of considerable importance; then, again, the intervention of the top oven-plate and sheet-flue extension K is sufficient to prevent the cooling of the oven, when fresh water is added to the reservoir E.

Another gain is effected by this sheet-flue extension

K, and situation of the pipe-collar F, in that of placing and constructing a regulating-damper at the back of said pipe-collar, which could not be done without this mode of construction, and the advantages to be derived therefrom are considerable, for whether a reversed draught is used, when the damper G is closed, or whether a direct draught is used, and said damper G open, in either case the products of combustion must pass back and around against the reservoir E, heating the water therein rapidly.

At R is the flange on the reservoir, to cover the joint or place of contact, and make all tight, and at S is the lugs or pins, to enter the corresponding holes in the top plate of the stove, and prevent the sliding backward horizontally of the reservoir, so as to open the joint or point of contact.

The reservoir in my construction is supported entirely by the top oven-plate A, Letters Patent having already been granted to me covering that manner of supporting and sustaining a reservoir.

At T are shown the bolts, which pass through the back plate of the stove D, cross the rear vertical flues, and enter or are joined to the back oven-plate C, and, by means of a nut at the outer end, bring the plates all up tightly together, holding them firmly where wanted, and preventing the escape of the gases.

Projections are cast on the bottom of the reservoir, so that also, by means of these bolts, the reservoir can also be tightly joined, so as to prevent all escape of gases, &c., into the room.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. For a diving-flue cooking-stove, a pipe-collar, or its equivalent, resting on the top oven-plate, and extending up through the top plate of the stove, to receive a stove-pipe, substantially in manner and for the purpose described and set forth.

2. The extending of the top sheet-flue of a cooking-stove, over the rear vertical flues and around the pipe-collar, for the purpose of heating a water-reservoir, substantially as described and set forth.

3. A damper located in the pipe-collar between the top oven-plate and top plate of the stove, for the purpose of forcing the heated air, products of combustion, &c., against the walls of a water-reservoir, so as to heat the same, when using a direct draught from the fire-pot to the exit-pipe, substantially in manner as described and set forth.

JOSEPH B. WILKINSON.

Witnesses:

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ANGELINE S. REILLE.