M. POND.

Cooking Range.

No. 49,001. Patented July 25, 1865.

Fig. 1.

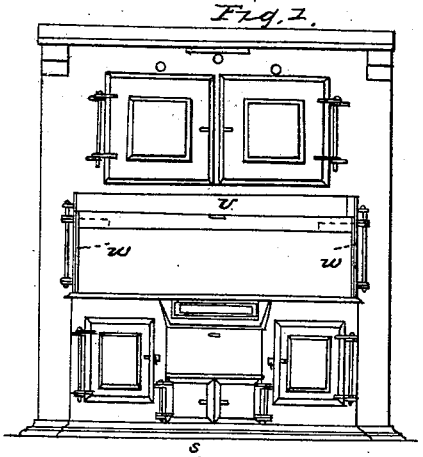


Fig. 2.

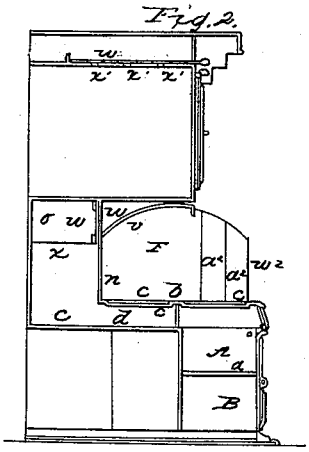


Fig. 3.

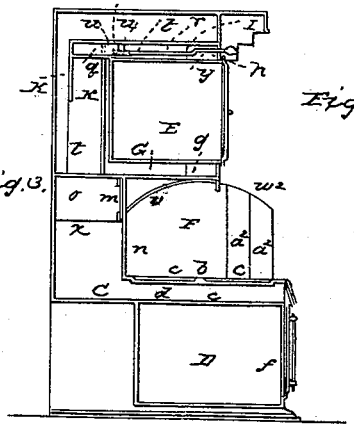


Fig. 6.

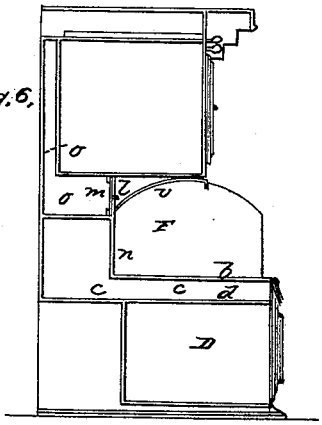


Fig. 4.

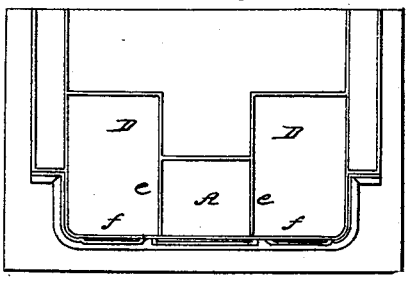
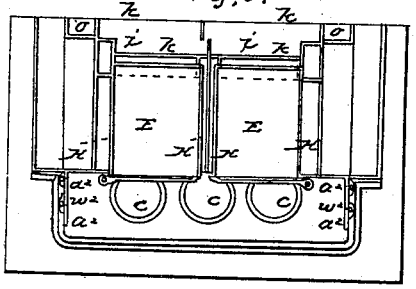


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

MOSES POND, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN COOKING-RANGES.

Specification forming part of Letters Patent No. **49,001**, dated July 25, 1865.

To all whom it may concern:

Be it known that I, MOSES POND, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Cooking-Ranges; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 denotes a front elevation of a range containing my invention. Fig. 2 is a vertical central and transverse section of it. Fig. 3 is a vertical and transverse section of it, taken through one of its ovens. Fig. 4 is a horizontal section of it, taken through the fire-place. Fig. 5 is a horirontal section of it, taken through the two ovens. Fig. 6 is a vertical and transverse section of it, taken through one of its steam-escape flues and one of the side flues of one of the ovens.

In the said drawings, A denotes the furnace or fire-place of the said range, it being provided with a grate, *a*, and arranged over an ash-chamber, B, and so as to open into a boiler-flue chamber or space, C, in the usual manner. The upper plate, *b*, of the said flue-space is perforated with two ranges of holes, *c c c*, for holding boilers or other culinary vessels or articles to be heated.

On either or each side of the fire-place, and directly underneath the lower plate, *d*, of the boiler-chamber C, a warming closet or chamber, D, is arranged, it being directly against the end plate or part, *e*, of the fire-place, and provided with an opening, *f*, and a door to each opening. The heat radiated from the end of the fire-place and from the bottom plate of the flue-space will serve to warm the air within the said closet, or any article or articles when placed therein. There are two ovens, E E, to this range, they being elevated above a boiler chamber or recess, F, and having directly under each of them a flue, G, which opens out of a vertical flue, *x*, which communicates with the rear part of the flue-space C, and leads the smoke therefrom and into the rear part of the oven-bottom flue G. At the front end of each of the sides of the said flue G there is a short passage, *g*, which opens communication between the flue G and a chamber or flue, H, leading vertically upward against the side of the oven. Each of the ovens has two of such side flues or chambers, H H, which communicate with the bottom flue, G, running underneath the oven. These side flues, by short passages *h* at their front ends, lead into a flue, I, which is directly on the top of each oven, and which at its rear opens into a diving-flue, K, which descends in rear and against the back plate of the oven, and opens by a passage, *i*, into an escape-flue, *k*, which leads to the chimney.

From the above it will be seen that the smoke from the fire-place, in coursing about the oven, will first pass underneath its bottom plate and from the rear to the front part thereof. Thence it will rush into the side flues and pass through them and against the side plates of the oven. From the side flues the smoke will enter the top flue of the oven at its front, and after passing through the said flue from front to rear the smoke will descend in the back flue and against the back plate of the oven, and from thence rush into and through the escape-flue *k*. By the peculiar arrangement of flues and their connecting-passages about each oven the said oven will be heated and the heat distributed within it to excellent advantage.

At each of the upper corners of the rear plate, *n*, of the recess F there is an opening, *l*, which is provided with a closing-valve, *m*, and leads through the said back plate, *n*, into one of two flues, *o o*, which go to the chimney or flue for the full discharge of the smoke. Each of the flues *o* is separated from the flue leading from the adjacent flue *k*, and serves, with its opening *l*, to discharge steam and odors from the boiler-chamber into the chimney.

On the top of each oven there is a damper, *q*, which slides horizontally and into and across the flue K at the back of the oven. The rod *r* of the damper goes through a projection, *s*, extending from the upper surface of the damper, and is there provided with a long screw, *t*, on which are screwed two nuts, *u u*, which are arranged on opposite sides of the projection *s*. The rod passes through the front plate of the flue I, and is provided with a shoulder or stop, *y*, which, when drawn against the said front plate, determines the extent of rearward movement of the rod.

By means of the screw *t* and the nuts *u u* the damper *q* may be adjusted so as to give the requisite amount of opening from the flue I into the flue K when the shoulder of the damper-rod may be against the front plate of the top flue of the oven. Owing to the inequality of draft in various chimneys to which cooking-

ranges may be applied, it is desirable to have some means of adjusting the draft to the maximum necessary for the range; otherwise, owing to the usual inattention of the cook, more fuel will be consumed than will be necessary for conducting the operations of the range.

The adjustable damper, with the shoulder on the rod thereof, enables the mason or person who may set up the range to adjust the draft to the best advantage, after which, although the draft may be diminished by the cook, it cannot be increased by her so as to produce an unnecessary consumption of the fuel.

The boiler-chamber F is provided with a movable mantel or cover, *v*, which is curved transversely to the arc of a circle, and is supported in corresponding grooves in side plates, *w w*, of the boiler-chamber, and so as to be capable of being moved back entirely underneath the ovens or drawn forward over the boilers. The purpose of this mantel is not only to interrupt the steam and conduct it to the escape-openings before mentioned, but to serve as a screen to prevent the heat from the boiler-chamber from being radiated into the room or discommoding the cook while either putting articles into or removing them from one of the ovens.

The object of having the mantel to slide back and forth is to enable the cook to have readier access to the rear range of boilers or boiler-openings than would be the case were the mantel fixed in its forward position.

Each of the side plates, *w w*, of the boiler-chamber may be composed of two separate pieces, *w' w'*, hinged together in such manner as to enable them to be folded upon one another and turned back against the front plate or part of the range, they being hinged thereto or to projections therefrom.

On the top of the range, and directly over the flues which are between the two ovens, there is a register composed of a valve, *w'*, and a series of openings, *x' x'*, leading out of both of such flues. The passages of the register should communicate with the chimney. By opening the register more or less the smoke may be discharged into the chimney from the upright oven-flues without going over the top of the oven. In this way the heat of the top plate of the oven may be reduced when it may be too powerful.

After a very great experience in the construction of cooking-ranges I am satisfied that the above-described peculiar arrangement of smoke-flues about each oven is one highly calculated to promote an even distribution of heat in the oven and an economy of fuel used in effecting such.

By the arrangement of the steam-escape openings and flues the latter become heated by the oven-flues, and in consequence thereof a draft will be generated in them, which will operate to facilitate the discharge of steam and odors from the boilers. In most, if not all, ranges heretofore constructed with elevated ovens the openings for the escape of steam have been just below the mantel, situated at the top of the range and over the ovens. In consequence of this the steam was very liable to escape into the room instead of going into the chimney; but with my arrangement of steam-escape openings and flues leading from the boiler-chamber and alongside of the oven-flues the discharge of the steam is rendered certain.

In most, if not all, ranges heretofore made the warming-closets have been placed over the mantel or shelf. This arrangement of them, by bringing them over the fire-place, rendered them expensive of construction, as well as very inconvenient for use. With my improved arrangement they are not only heated both by the fire-place and boiler-chamber, but are disposed where access can be had to them without unpleasant exposure to the heat of the fire-place.

Each of the extensions w^2 of the ends of the boiler-chamber beyond the front plate of the ovens of the range I make in sections or parts a^2 a^2, hinged together, and to the front part of the range, the same being as represented in Figs. 1, 2, 3, and 5, and more particularly in the latter figure. The purpose of so making such parts and so applying them together and to the front plate is to enable them to be folded back against the front plate and out of the way when the curved fender or plate *v* is in its rearmost position.

I claim—

1. The combination and arrangement of the flues and connecting-passages thereof about each of the ovens, the same consisting of the flue G, the passage *g*, the flues H H, the passages *h h*, the flue I, the diving-flue K, and the passage *i*, the whole being to cause the smoke and heat to pass in contact with the oven, in the manner as described.

2. The improved arrangement of each of the steam-escape openings *l*, and its discharge-flue *o* with the boiler-chamber F and the oven and its flues.

3. The damper *q*, adjustable on its rod, substantially as described, in combination with the shoulder *y*, or its equivalent, on such rod, the whole being arranged so as to operate in manner and for the purpose as specified.

4. The arrangement of the closets D D, the fire-place, the flue G, the flue *x*, the ovens E E, and the recess or chamber F.

5. The arrangement of the movable mantel *v* with the ovens E E and the boiler-chamber F, the same being as and for the purpose set forth.

6. The above described mode of making each of the extensions w^2 of the side plates, *w w*, of the boiler-chamber—viz., in sections or parts a^2 a^2, hinged together, and hinged to the front part of the range, for the purpose described.

MOSES POND.

Witnesses:
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R. H. EDDY.