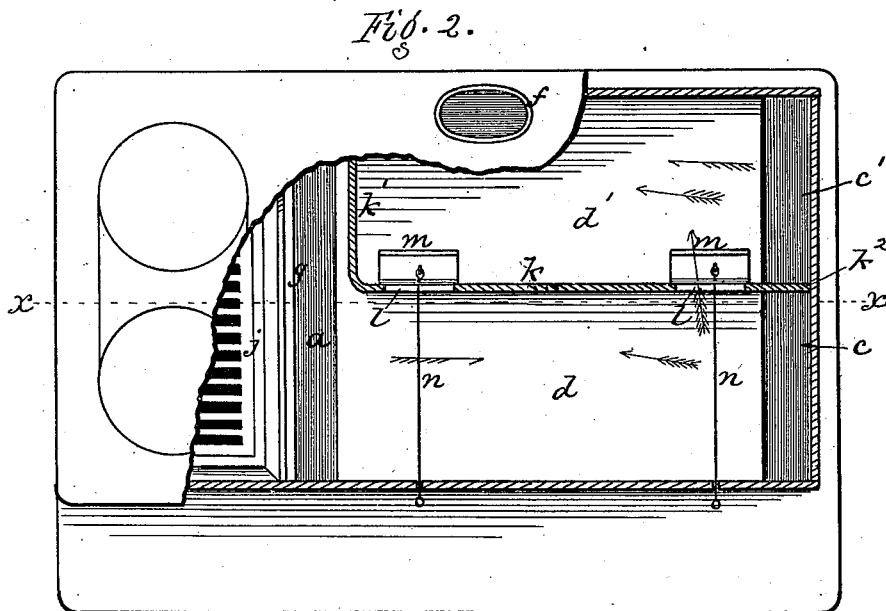
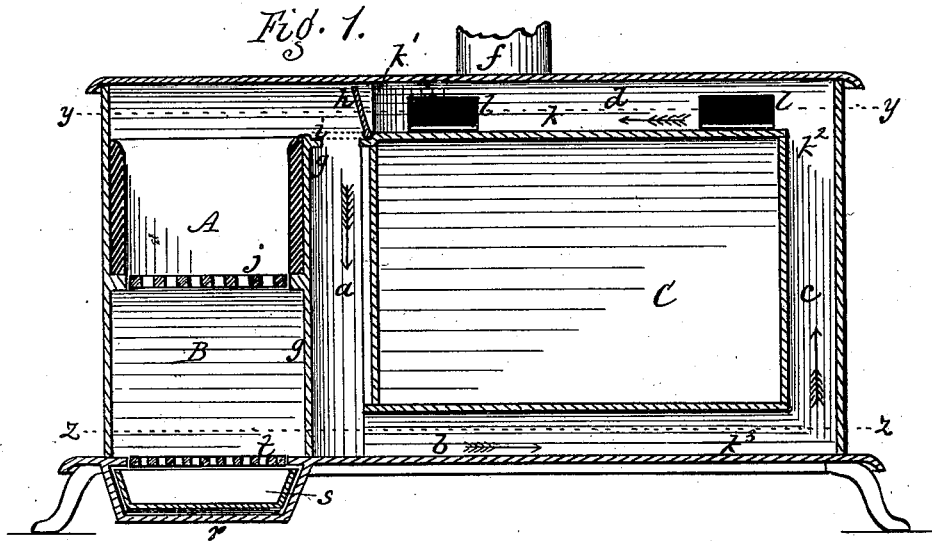


J. B. LONG.
Cooking-Stove.

No. 215,827.

Patented May 27, 1879.



Attest.
Jacob Spauld
R. E. White

Inventor.
James B. Long
per R. L. Osgood,
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Fig. 3.

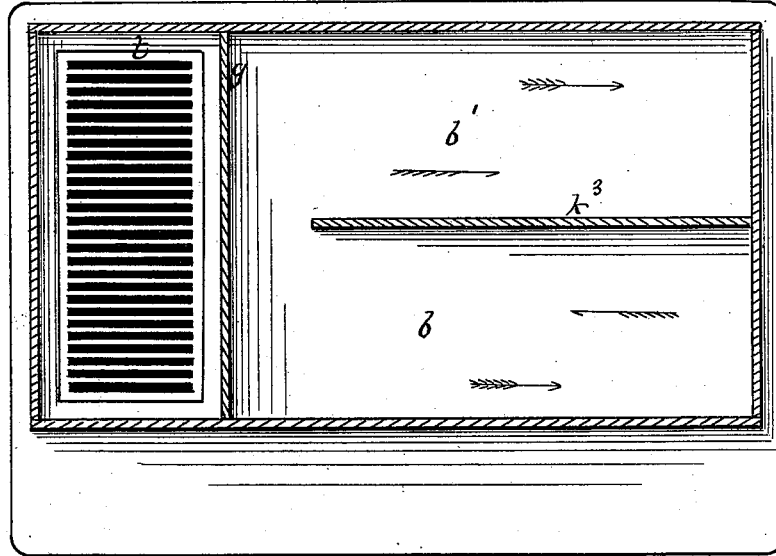


Fig. 4.

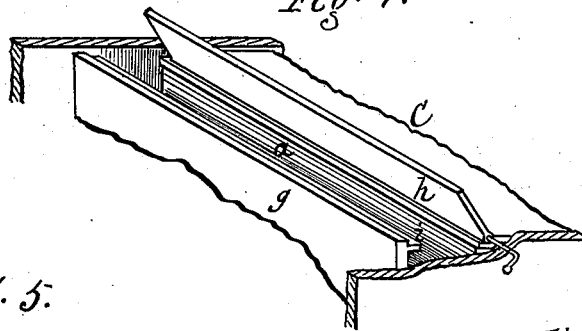


Fig. 5.

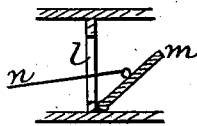
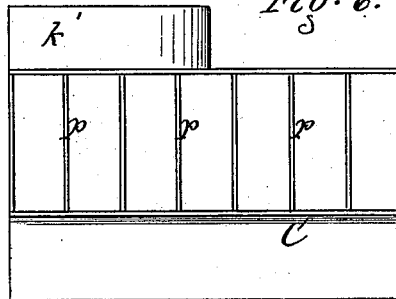


Fig. 6.



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UNITED STATES PATENT OFFICE.

JAMES B. LONG, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN COOKING-STOVES.

Specification forming part of Letters Patent No. **215,827**, dated May 27, 1879; application filed June 22, 1878.

To all whom it may concern:

Be it known that I, JAMES B. LONG, of the city of Rochester, county of Monroe and State of New York, have invented a certain new and useful Improvement in Stoves and Ranges; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of a cooking-range in line *x x* of Fig. 2. Fig. 2 is a horizontal section in line *y y* of Fig. 1. Fig. 3 is a similar section in line *z z* of Fig. 1. Figs. 4, 5, and 6 are detail views.

My improvement relates to cooking-stoves and ranges having revertible flues for passing the heat around the oven.

The invention consists in the combination and arrangement of certain parts by which the heat may be carried either above or below the oven at pleasure, as hereinafter more fully described.

The drawings show a cooking-range, in which A is the fire-chamber; B, the ash-pit, and C the oven. The oven is surrounded by flues *a b b' c c' d d'*, as shown, so that the heat may make a circuit around the same, and be finally discharged from the top flue through the smoke-pipe *f*. Ordinarily, in stoves of this kind, the heat first passes over the top of the oven, thence down behind the oven, thence under it, and finally to the top, where it escapes, in which case the bottom of the oven frequently lacks heat.

I construct the flues so that the heat may be passed in either direction, as follows: *g* is a division-plate between the fire and ash-chambers and the flue *a*. The heat carried over the top of this plate is carried above or below the oven accordingly as the valve *h* is turned up or down over the top of the said flue. This valve is hung on the top front edge of the oven, which has a depressed seat formed for it, and a corresponding depressed seat, *i*, is formed in the top of plate *g*. The valve extends across the whole width of the stove, and when turned up, as shown in Fig. 1, the heat is all forced to go down through the flue *a* and under the bottom of the oven. When turned down, as indicated by the dotted lines, it covers the top of flue *a*, and the

heat is then carried over the top of the oven. The valve *h* is operated by a stem or handle which extends out through the side of the stove.

k is a partition which rests between the top of the oven and the top plate of the stove, and divides the top flue into two compartments. At the front end of the oven this partition turns to the right, as shown at *k'*, and forms a division between the flue *a* and that portion of flue *d'* over which is situated the smoke-pipe, so that the heat has first to enter the other portion of flue *d* both in passing over and under the oven before it can enter *d'*. In that portion of partition *k* over the top of the oven are one or more ports, *l l*, opening from *d* into *d'*, and these ports are covered by falling valves *m m*, operated by rods *n n*, which extend to the outside of the stove. When these valves are opened the heat from *d* can pass into *d'*, as shown in Fig. 2.

k² is a vertical partition, being a continuation of *k*, and serving to divide the vertical back flue, *c c'*, and *k³* is a horizontal partition, a continuation of *k*, which divides the bottom flue, *b b'*. This partition ends abruptly at the front of the oven, as shown in Figs. 1 and 3, leaving both compartments of the bottom flue, *b b'*, communicating directly with the bottom of flue *a*.

The operation is as follows: When it is desired to throw the heated air directly under the oven, the valve *h* is opened or thrown up, as shown in Fig. 1. The hot air then passes down through flue *a*, thence through flues *b b' c c'*, and up into flue *d d'* in full volume. The amount of air that enters *d* is carried through the ports *l l* and discharged in common with that which enters *d'*. In this manner the air, when hottest, is passed under the oven, and when coolest over it.

The action of the currents is indicated by the whole arrows. To reverse the currents and carry the hottest air over the oven and the coolest under it, the valve *h* is closed, covering the flue *a*, and the valves *m m* are also closed between the flues *d d'*. The hot air then passes over the oven, being thrown into the passage *d* by the partition *k'*; thence it passes down through the half-flue *c*; thence along the corresponding bottom flue, *b*; then

passing the end of the partition-plate k^3 it passes back through b' and c' into d' , and finally escapes by the exit-pipe, its passage being thus indirect, as indicated by the half arrows.

I am aware that various forms of downward and indirect drafts are used in stoves.

The novelty in my invention consists in the combination of the various parts, consisting of the division-plate g , valve h , the partitions $k^1 k^2 k^3$, and valves $m m$, by means of which the draft may be reversed and properly guided, as before described.

The upper front portion of the oven in the flue a is provided with a series of outwardly-projecting flanges, $p p$, arranged, preferably, in squares, and the spaces between are filled with plaster or other non-conducting material, Fig. 6. This prevents the upper front portion of the oven from becoming overheated, while the lower portion next the bottom obtains the full benefit of the heat.

Having thus described my invention, I claim—

1. In a cooking stove or range, the combination, with the oven C , of the division-plate g , valve h , partitions $k^1 k^2 k^3$, and the valves $m m$, the valve h being pivoted to the upper front corner of the oven, and arranged to al-

ternately open and close the flues $a d$ as it is thrown from one position to the other, and the valves $m m$ opening from flue d into flue d' , the whole arranged as described, so that by shifting said valves the draft will be forced to pass either under and around the oven or over and beneath it, as shown and described, and for the purpose specified.

2. In a cooking stove or range, the combination, with the oven C , having the flues $a b b' c c' d d'$ surrounding it, of the partitions $k^1 k^2 k^3$, starting on one side of the stove at its junction with the oven, extending thence centrally through said flues around the oven, dividing them into two passages, and ending abruptly at the front end at the bottom of the oven, said partitions being provided with the valves $m m$ on top of the oven opening from one passage into the other of the top flue, as shown and described, and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JAMES B. LONG.

Witnesses:

R. F. OSGOOD,
JACOB SPAHN.