

J. OLD.
Cooking-Range.

No. 160,542.

Patented March 9, 1875.

Fig. 2.

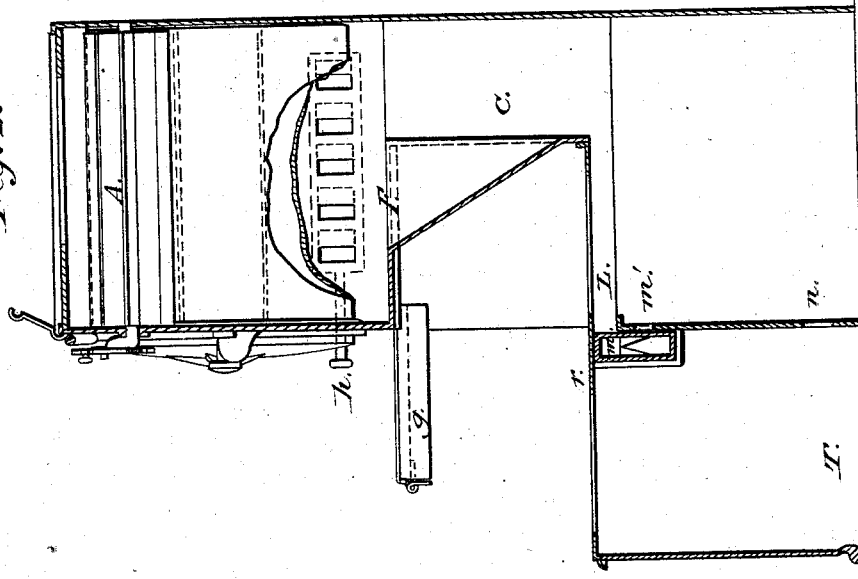
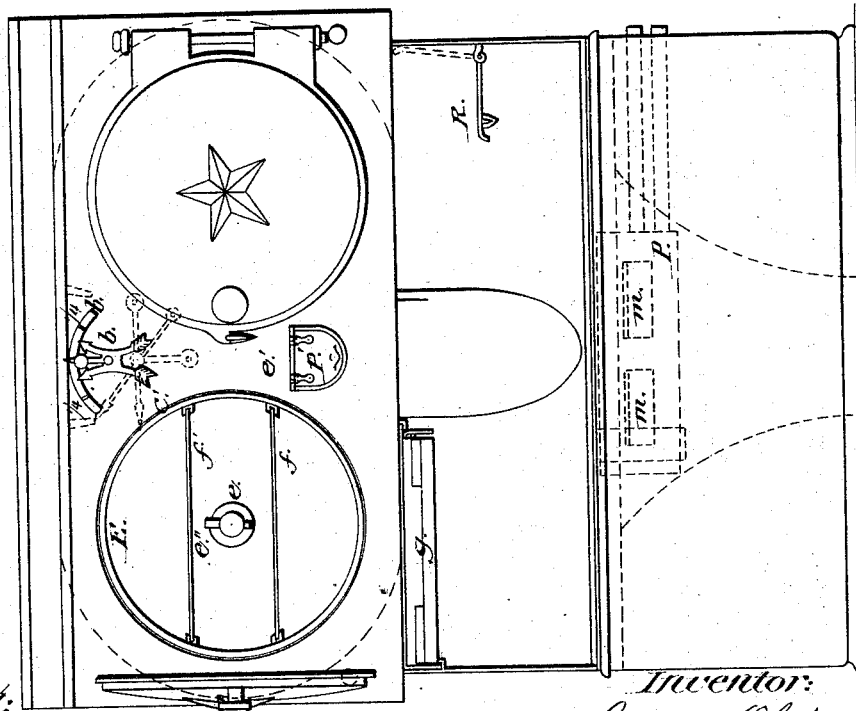


Fig. 1.



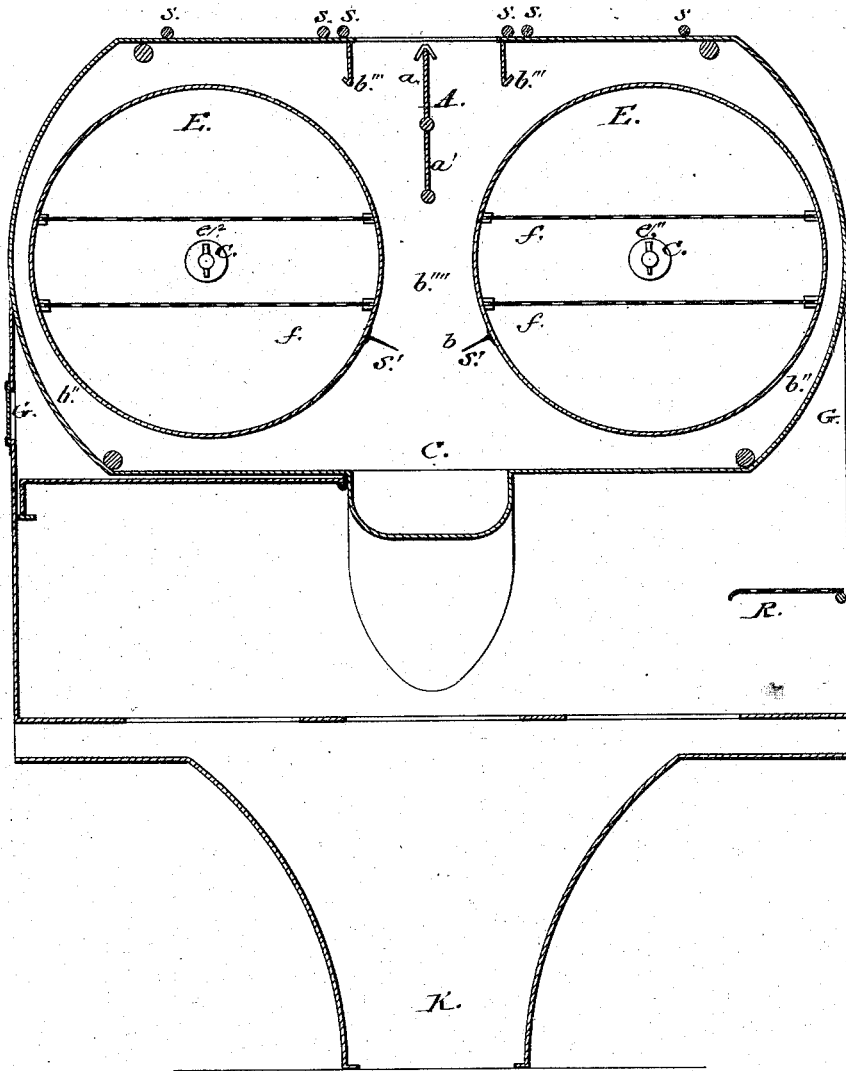
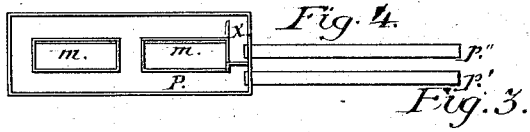
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By Milton C. Conn.
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Witnesses:

Alfred W. Churchill

Inventor:

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UNITED STATES PATENT OFFICE.

JAMES OLD, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN COOKING-RANGES.

Specification forming part of Letters Patent No. 160,542, dated March 9, 1875; application filed September 10, 1874.

To all whom it may concern:

Be it known that I, JAMES OLD, of the city of Pittsburg, State of Pennsylvania, have invented certain Improvements in Cooking-Ranges, of which the following is a specification:

The invention consists of a novel arrangement of the dampers of a cooking-range, whereby the heating of the ovens may be effectually regulated, and in so arranging the ovens that they may be revolved against the edge of the damper-wings, which serve as scrapers to clean the outer surfaces of the ovens from accumulations of ashes and soot. It also consists of a device for conveying the vapors arising from the cooking into the draft-flues, and in furnishing a receptacle for the light dust, ashes, and soot. The invention further consists of a water-back for the fire-grate, having draft-holes through its center, and provided with a right-angular partition placed between the inlet and outlet pipes, over which the heated water flows. This arrangement is intended to allow the heated water to pass out so low down that no steam can enter the pipe and interfere with the circulation.

Figure 1 is a front elevation of the range. Fig. 2 is a vertical transverse section of the same. Fig. 3 is a vertical longitudinal section. Fig. 4 is a view of the interior of the water-back.

A is the damper, having two wings, *a a'*. Its axis is supported by the front and back plates of the oven-case, and it is revolved or turned to the right or left by means of the index-lever *b* at the front of the oven-case. The wings *a a'* being in line with lever *b*, the positions which they take are shown by the direction which the lever points, or the place it occupies on the graduated arc *b'*. The ovens E are circular. Between them and the oven-case are passages *b''*, leading from the main draft-passage C to the chimney. The draft of these passages is regulated by means of damper A.

If it is wished to confine all the heat to one oven the damper is turned to the right or left until the lever points to the notch marked $\frac{1}{2}$. This brings the wing *a* close to one of the divisions *b'''* and closes the passage *b''*, while the wing *a'* stops the direct-draft passage *b''''*.

This arrangement compels the heat and draft to pass around one of the ovens to the exclusion of the other. To equalize the heating of the ovens the lever is placed in a horizontal position, as represented by the dotted lines C'. This closes the direct-draft passage *b''''*, but leaves the passages *b''* open. In like manner a greater or less amount of heat may be admitted to either oven.

The damper A is intended not only to regulate the heating of the ovens, but also to regulate the draft. The ovens E fit closely in circular openings in the front plate of the oven-case, and are supported at the rear by pivots *e'*, projecting from the back plate. Washers, with pins passing through the pivots, serve to secure the ovens and prevent them from coming out. They are revolved freely upon their axes by means of the racks *f*, which serve the purpose of levers.

When the ovens require cleaning the wing *a* of the damper A is turned down closely against their outer surfaces, and they are revolved against it. In this way the ashes and soot which gather upon the ovens may be quickly and easily removed. To clean out the passages *b''* the scrapers *s' s'* are attached to the ovens by means of flanges, and the ovens revolved as before.

By these two arrangements the passages and ovens may be kept entirely clear of soot and ashes. If it should be necessary to remove the ovens from their places, the flanges *s' s'* may be taken from the ovens through the door P'. F is an opening through the bottom plate of the oven-case immediately under the passage *b''*. It is designed as a flue to carry off the vapors produced by the culinary operations. The entrance to this flue is covered by a sliding shield, *g*, by means of which it can be made larger or smaller, as circumstances may require. G is a draft-aperture in the end plate of the oven-case, which leads into the passage above opening F, and gives draft to aid in carrying off the vapors. The draft is regulated by means of valves operated by the handle *h*. Passages or vapor-flues like the one just described may be placed at either or both ends of the range. K is an ash-pit back of the fire-box and under the top plate of the range. This pit is designed to receive the

ashes and soot which are scraped from the ovens and flues above, and also as a receptacle for the ashes carried back by the draft. *n* is an opening in the back plate of the fire-box, through which the ashes and soot in pit *K* are removed. *P* is the water-heater, which is placed at the highest point possible of the back plate of the fire-box. It is so placed in order to serve as a support for the range-top *r*, and also that it may be as much as possible above the fire. It is an advantage to have the heater in this position, where it is constantly under the influence of the heat, for when it is placed lower down the dead coals and ashes accumulate around it and prevent the heat from reaching it. *m* are holes through the center of the heater, through which it is designed the light dust and ashes produced by agitating the fire shall be carried by the draft into the pit *K*. This device also greatly increases the heating-surface of the water-heater.

An interior view of the water-heater is shown in Fig. 4. At the end where the pipes enter (the inlet and outlet pipes entering at the same end) is a right-angular partition, *x*, the horizontal wing of which divides the heater longitudinally below the middle, while the vertical wing extends upward nearly to the top, sufficient space being left for the water to pass freely over it. The inlet-pipe *p'* enters the water-heater at any point below the partition. The outlet-pipe *p''* enters it above the partition as far down as possible. By this arrangement the cold water is made to circulate the whole length of the heater before reaching the outlet-pipe; and again, as the exit is placed so far below the surface of the water, it is not possible for the steam to enter the outlet-pipe, and thus interrupt the free circulation of the water. On the top plate of the oven-case the strips *s s*, &c., are cast, designed to furnish support for a hot-air chamber to be built above the range. *L* and *C* are draft passages or flues, communicating with each other and leading from the fire-box

to the oven-case, and thence to the chimney. *T* is the ash-pit under the fire-box. *R* is a swinging shelf attached to the end plate of the range, on which dishes, food, and other articles may be placed.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The damper *A*, having wings *a a'*, in combination with the direct flue *b'''*, flues *b''*, and circular ovens *E*, substantially as and for the purpose hereinbefore described and set forth.

2. The circular ovens *E*, arranged to revolve on their axes, in combination with the damper *A*, substantially as and for the purpose hereinbefore described and set forth.

3. The ash-pit *K*, in combination with the direct flues *L* and *C*, and in the rear of the fire-chamber, to receive the ashes, dust, soot, &c., carried by the draft through the flue *L* and openings *m m* in the water-back, substantially as and for the purpose hereinbefore described and set forth.

4. The combination and arrangement of the dampers *G* in side plate and shield or damper *g* in the bottom plates of the oven-case, and the flues *b''* to carry off the fumes, vapors, &c., arising from the culinary operations about the range, substantially as and for the purpose hereinbefore described and set forth.

5. The water-back *P*, provided with draft-openings *m m*, partition *x*, inlet-pipe *p'*, and outlet-pipe *p''*, the latter being, as described, below the surface of the water, the said water-back being so placed under the range-top *r*, in the manner set forth, as to support the same, substantially as and for the purpose hereinbefore described and set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 27th day of August, 1874.

JAMES OLD.

Witnesses:

WILLIAM F. ROBB,
ROBERT ROBB.