

C. VAN De MARK.

Cooking Stove.

No. 99,264.

Patented Jan. 25, 1870.

Fig. 1.

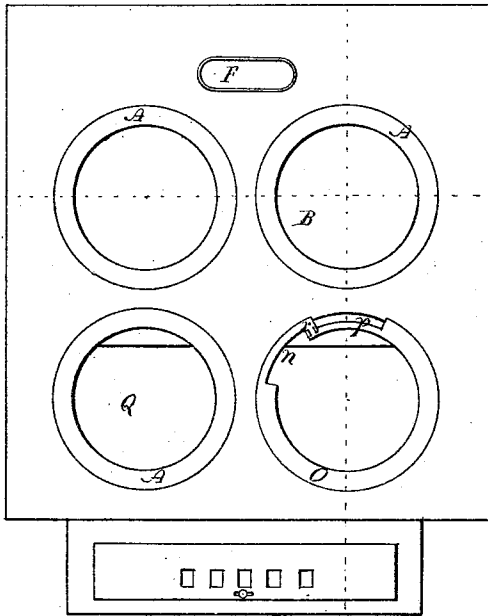


Fig. 2.

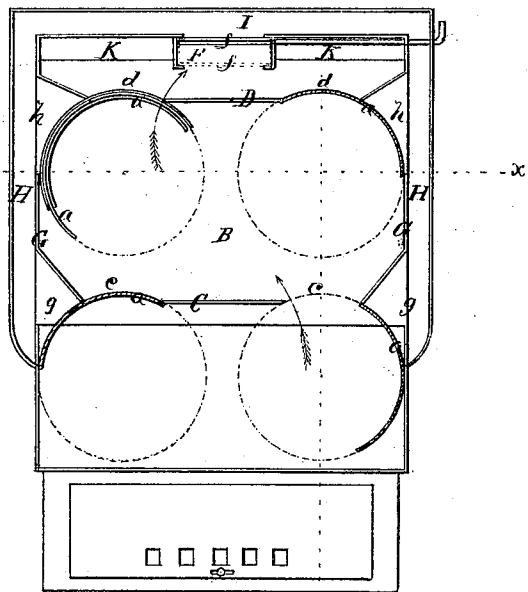


Fig. 3.

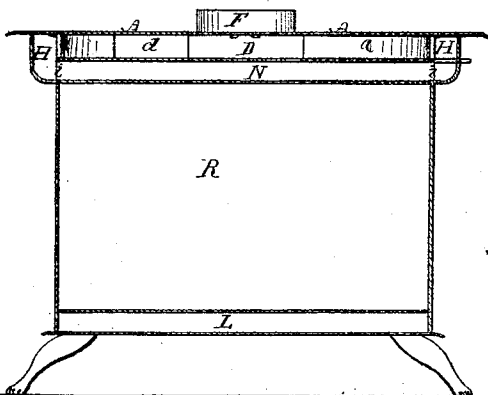


Fig. 4.

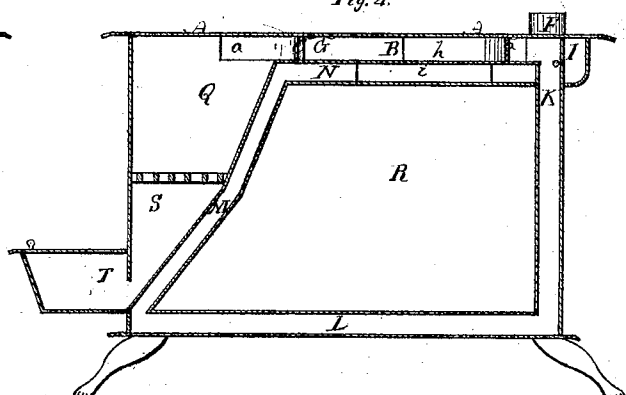


Fig. 5.

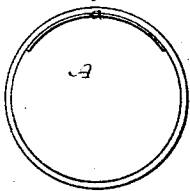


Fig. 6.

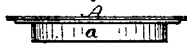


Fig. 7.

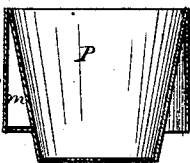
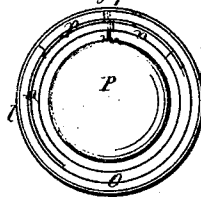


Fig. 8.



Witnesses:-

J. S. Brown.
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United States Patent Office.

CHARLES VAN DE MARK, OF PHELPS, NEW YORK.

Letters Patent No. 99,264, dated January 25, 1870.

COOKING-STOVE.

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

To all whom it may concern:

Be it known that I, CHARLES VAN DE MARK, of Phelps, in the county of Ontario, and State of New York, have invented an Improved Cooking-Stove; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a top view of a cooking-stove, provided with my improvements.

Figure 2, a top view of the same, with the top-plate removed, and the flanges of the damper-rings in horizontal section.

Figure 3, a transverse vertical section thereof, in a plane indicated by the line *x x*, figs. 1 and 2.

Figure 4, a longitudinal vertical section of the same, in a plane indicated by the line *y y*, figs. 1 and 2.

Figures 5 and 6, bottom and side views respectively of a part detached.

Figure 7, a bottom view of parts detached.

Figure 8, a central vertical section of a part detached.

Like letters designate corresponding parts in all of the figures.

The first feature of my invention consists in damper-rings, inserted in the boiler-holes of the stove, so that they receive the boilers and other stove-furniture as in the ordinary boiler-holes, the valves or dampers thereof being formed by concentric flanges, which project from their lower surfaces downward across the flue-space under the top-plate of the stove, over the oven, and being arranged respectively in connection with division-plates and damper or valve-apertures, so that by simply turning the damper-rings, as required, the passage of the draught may be closed, or partially closed, or directed in any manner desired, through the stove.

The second feature of my invention consists in additional and peculiarly-arranged stove-flues, as hereinafter specified; and

Another feature of my invention consists in a peculiar construction of damper-rings, in connection with a specially-constructed boiler or heater, as hereinafter set forth.

The damper-rings *A A* are applied to any or all of the boiler-holes, in which they simply fit, like an ordinary enlargement-ring used with some cooking-stoves. These damper-rings may be quite narrow, and they are closed by the usual covers.

Their damper or valve-flanges *a a* project downward in the arc of a concentric circle, as represented in figs. 5 and 6, the depth being sufficient to reach across the flue-space *B* over the oven, and their width great enough to cover the damper-space or spaces, which they are intended to close. The rings are simply turned in the holes of the stove to open and close the

damper-spaces, and this can be done while boilers or other utensils are resting in them. Suitable marks may be formed on them, and on the adjacent stove-plates, to indicate their proper positions.

The damper-rings of the front boiler-holes are arranged in connection with a partition-plate or plates, *C*, the damper-flanges closing damper-apertures *c c* therein, as shown in fig. 2, where the right-hand aperture is represented as open, and the left-hand aperture as closed by the damper-flange. By this front damper arrangement the draught can be conducted back over the oven, either through one of the apertures *c c*, so as to concentrate the heat under the utensil in that damper-ring, or through both apertures *c c* simultaneously, whether they are entirely open or partly closed, or whether one is closed more than the other; or both apertures may be entirely closed, so as to stop all draught over the oven.

The damper-rings of the back boiler-holes are employed in connection with another transverse partition-plate or plates, *D*, the damper-flanges closing apertures *d d* therein, in the same manner as the apertures *c c*, in the front division-plate, are controlled by the front damper-rings.

These back apertures *d d* admit the draught immediately to the stove-pipe opening *F*, when a pipe-damper, *f*, therein is turned back, as shown in fig. 2. The arrows show the direction of the draught.

A modification is shown at the left-hand back boiler-hole in fig. 2, where the concentric damper *a* is represented as separate from the ring; but this is neither so cheap, nor simple, nor convenient as if joined to the ring itself.

These damper-rings may be applied to an ordinary stove, if furniture of smaller size is used, to fit the somewhat smaller boiler-holes in the rings, by inserting suitable division-plates, with apertures to correspond with the dampers, in said stove. But my improved arrangement of stove-flues, in connection with these damper-rings, gives additional efficiency thereto.

First, there are side-flues *H H* above the oven, and outside of the usual flue-space *B* over the oven, and also a back-flue, *J*, above the oven and behind the rear diving-flues *K K* of the stove, the flues *H H* opening into the flue *I*, and the latter into the stove-pipe opening *F*, when the pipe-damper *f* is turned forward, as shown by dotted lines in fig. 2.

There are apertures *g g* into the side-flues *H H*, direct from the fire-chamber, and these apertures are closed, or not, by the damper-flanges of the front damper-rings, made wide enough, as shown in fig. 2, for the purpose, in addition to their regular duty to close the apertures *c c*.

There are also apertures *h h*, through the side division-plates *G G*, from the flue-space *B*, over the

oven, to the said side-flues H H. These apertures are similarly closed by the enlarged damper-flanges of the back damper-rings, as represented. The front apertures *g g* may be dispensed with, if preferred, they not being entirely essential.

Also, in connection with these side-flues H H, and additional back flue I, and with the diving-flues K K behind the oven, and flue L under the oven, I form a flue, M, between the front of the oven and the ash-pit and fire-chamber, and a second flue, N, over the oven, between the same and the ordinary flue-space B.

This flue N communicates with the side-flues H H, by apertures *i i* in the side division-plates, as shown in figs. 3 and 4. It may extend over the whole oven, or only over the forward part of it, so as to afford sufficient space for the exit of the draught to the side-flues H H.

The uses of these various flues are as follows:

If it is desired to concentrate the heat of the fire under one or both of the front boiler-holes, both the damper-apertures *c c* are closed by the damper-rings, and one or both of the apertures *g g* opened, the pipe-damper *f* being turned forward. Thus, the draught will pass directly away through the flues H H and I to the stove-pipe. Or, if the heat is to pass through the flue-space B over the oven, and be concentrated under one of the boiler-holes in front, and one at the back, the apertures *g g* and *h h*, and one each of the apertures *c c* and *d d* are closed, the pipe-damper *f* being thrown back. Then the course of the draught will be as represented by arrows in fig. 2. Or, if all the boiler-holes are to receive equal heat, and the draught passed directly to the stove-pipe, all of the apertures *c c* and *d d* are to be opened, the side apertures *g g* and *h h* all closed, and the pipe-damper *f* thrown back. Or, if it is desired to send the draught through the flue-space B into the side-flues H H and back-flue I, the apertures *d d* and *g g* are closed, the apertures *c c* and *h h* opened, and the pipe-damper *f* thrown forward. Or, if it is desired to turn the draught around the oven, the side-apertures *g g* and *h h* are closed, the apertures *c c* and *d d* are opened, and the pipe-damper *f* turned forward. The draught will then pass back through the flue-space B, down the diving-flues K K back of the oven, forward through the flue L under the oven, up through the flue M in front of the oven, back through the flue N immediately over the oven, thence out, through the apertures *i i*, into the flues H H, and finally into the flue I and to the

stove-pipe, thus making a complete circuit round the oven, heating it very completely and evenly.

A peculiar construction of damper-ring is shown at O, figs. 1, 7, and 8, to be used in connection with a boiler or heater, P, which has a case, *l*, around the part that is situated outside of the stove, so as to enclose a space, as shown.

This space, on one side, is divided by a vertical radial partition, *m*. The ring O has a notch or aperture, *n*, inside of its damper-flange, and another adjacent notch or aperture, *p*, outside of the damper-flange.

The boiler or heater is set into the ring, so that its partition-plate *m* will rest between the two adjacent apertures *n p*, being held in position by a notch, or projections, *r*.

Now, when the damper-ring is so placed that the aperture *p* is opposite to an aperture, *c*, (as in fig. 1,) or *d*, and the other exit-passages for the draught closed, or partly closed, the draught will ascend through the inner aperture or notch *n* in the ring O, and then, being prevented from passing direct by the partition *m*, it passes around the boiler or heater, and finally down, through the aperture or notch *p*, outside of the ring. By this means an intense heat is concentrated around the boiler, as when it is required to heat water rapidly, or around a heater, when, for instance, smoothing-irons are to be heated.

The plate between the flue M, in front of the oven R, and the fire-chamber Q, and ash-chamber S, is inclined forward, so as to slide the ashes directly forward into the ash-pit T, under the hearth.

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

The damper-rings A A, with concentric damper-flanges *a a*, substantially as and for the purpose herein specified.

Also, the side and rear flues H H and I, arranged substantially as and for the purpose herein set forth.

Also, the flue M, in front of, and the flue N immediately over the oven, in combination with the flues H H and I, and with the back, diving, and bottom-flues K K and L, substantially as herein specified.

Also, the construction of the damper-ring O, in combination with the boiler or heater P, as herein described.

CHARLES VAN DE MARK.

Witnesses:

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D. J. BROWN.