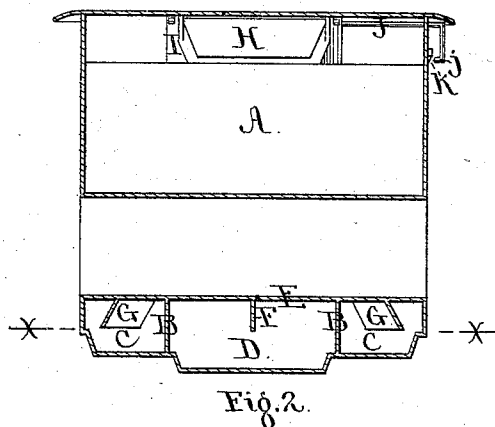
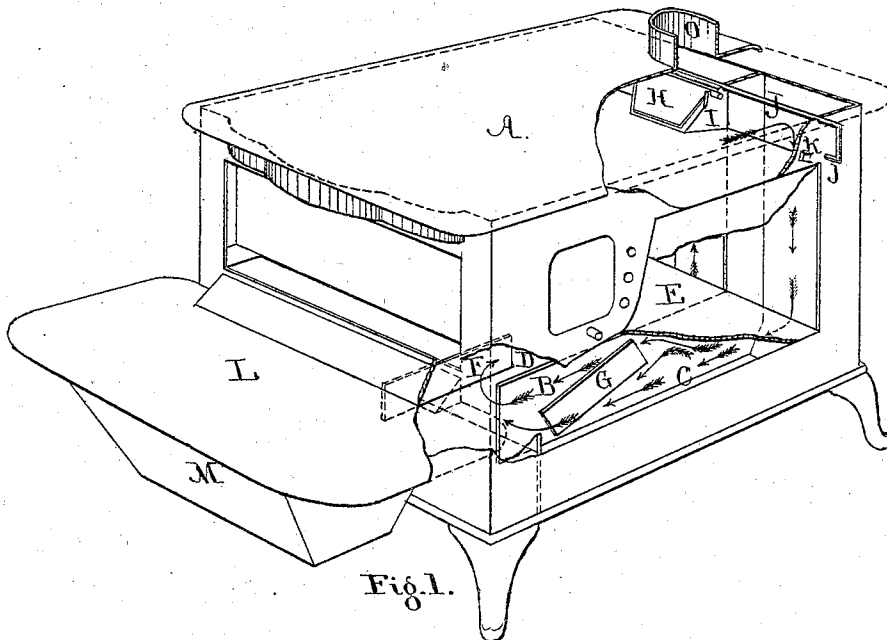


D. G. LITTLEFIELD.
Cooking-Stoves.

No. 138,093.

Patented April 22, 1873.



Witnesses.

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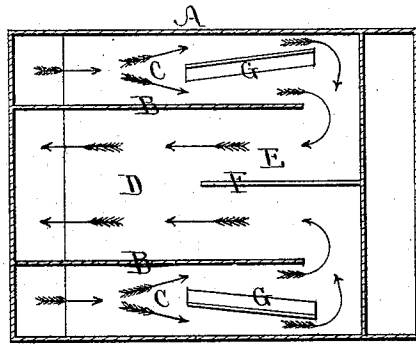


Fig. 3.

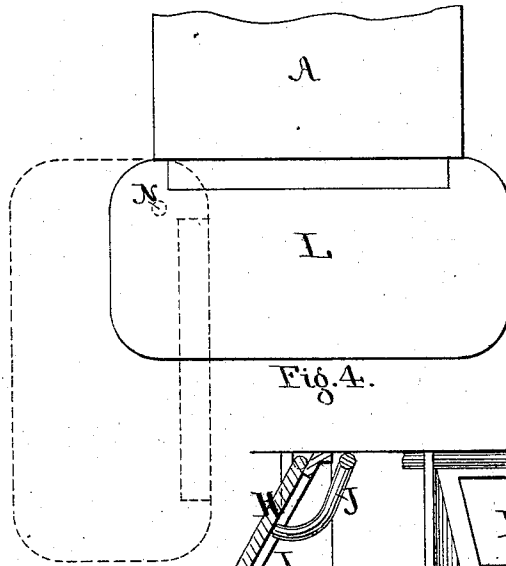


Fig. 4.



Fig. 5.

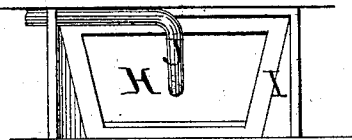


Fig. 6.

Witnesses.

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UNITED STATES PATENT OFFICE.

DENNIS G. LITTLEFIELD, OF ALBANY, NEW YORK.

IMPROVEMENT IN COOKING-STOVES.

Specification forming part of Letters Patent No. **138,093**, dated April 22, 1873; application filed February 19, 1873.

To all whom it may concern:

Be it known that I, DENNIS G. LITTLEFIELD, of the city and county of Albany and State of New York, have invented certain Improvements in Cooking-Stoves, of which the following is a full and exact description, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a perspective view of the stove, having portions of the exterior and interior plates broken away for the purpose of more clearly showing the arrangement of flues and damper; Fig. 2, a transverse longitudinal section behind the front plate of the stove; Fig. 3, a horizontal section at the line *xx*, showing the under side of the bottom oven-plate; Fig. 4, a plan view of the front part of the stove and hearth; and Figs. 5 and 6 are detached views of the damper, seat, and handle.

My invention relates to certain improvements in cooking-stoves, whereby the distribution of the heat is more perfectly effected, the heated currents of the products of combustion are kept under perfect control, and the stove rendered more convenient and useful, as hereinafter explained.

As shown in the drawing, the stove A represents a "three-flue" cooking-stove, in which the space left between the body of the stove and the back and bottom of the oven is divided, by the flue-strips B B, into the two descending side flues C C, and the central ascending flue D. The bottom oven-plate E is supported by the flue-strips B B in the usual manner. At its front end is the strip F, extending into the central flue D about half way across the oven. It is cast upon and with the bottom oven-plate E, and serves the twofold purpose of preventing the formation of eddies in the central and side flues, as hereinafter described; and from its location, where it receives the impinging currents of heated gases, it acquires a high degree of heat, which it readily imparts to the oven-plate. Near the front ends of the side flues C C are the two deflecting-strips G G, which incline outward in both directions toward the sides of the stove, as shown in the drawing. The strips are also cast upon and with the bottom oven-plate, and obstruct to a certain degree the passage of the heated gases from the back end of the side flues to the

central flue, permitting a small portion only of the heat to escape in the most direct and shortest course to the central flue, while the largest portion is deflected into the front corners of the side flues, and effects the heating of the front part of the oven in a more perfect manner than has heretofore been accomplished. These strips, like the strip F and for the same reason given, impart much additional heat to the bottom oven-plate. The three strips F G G do not reach down to the bottom of the stove, sufficient space being left underneath them for the free passage of scrapers for the removal of the ashes and dirt from the bottom flues. At the rear end of the oven and communicating with the upper end of the central flue D is the opening for the "direct draft," which is covered by the damper H. It is formed in the damper-seat I, which is made in the form shown, having its seat upon the top plate of the oven, and thereby forms a sufficient support for the top of the stove and prevents it from sinking down at this point, which is a defect common to most cooking-stoves. The damper H, unlike others of its class, is swung upon trunnions formed on its upper ends instead of its lower ones. It is operated by means of the detached handle J, which lies close up to the top of the stove where it does not obstruct the draft of the stove by arresting and accumulating the particles of dirt carried along by the draft currents. The damper is held open by passing the bent end *j* of the handle over the catch K formed upon the side of the stove, and to effect this the damper handle J is allowed a slight endwise movement.

By constructing the damper and seat as described and shown, a much more perfect fitting of the parts can be obtained, and upon releasing the handle J the certainty of the closing of the damper H is insured, thereby remedying a common and well-known defect in dampers, either in the sliding damper or in those having their turning-points at their bottom edges, in both of which no certainty of their position could be established, as they were liable to be left in neither extreme position, open or closed, while by my arrangement the damper must be fully open or entirely closed, as no intermediate position is provided for. The hearth

L is placed at the front end of the stove, and extends beyond its sides. It forms a cover to the ash-pit M, from over which it swings upon the pivot N, as indicated by the dotted lines in Fig. 4. By this arrangement I obtain a large unbroken surface to serve as a shelf for holding cooking-utensils, either in its closed or open position. This I consider as an important improvement over the common construction of hearths, wherein but a small part of it is made into a movable or swinging plate, thereby breaking up its surface and rendering it of but little utility as a shelf, as herein described.

One of the most common defects of the three-flue cooking-stoves is their liability to have their proper working deranged by means of eddies of the gases that form in the flues under the oven. These are produced by the admission of cold air into the flues, either by raising one of the covers of the stove, by the fire becoming dull and sluggish at one end of the fire-chamber, or by any means whereby the temperature of the gases on one side of stove becomes reduced considerably below that of the other side. The hottest gases will, from their volatility and from their greater velocity, monopolize the central flue to the almost entire exclusion of the colder gases coming from the other side. This defect is entirely remedied by the strip F, whereby the hottest gases are directed so far into the central flue D as to form a sufficient vacuum on its opposite side to draw the colder gases

through the flue with them, thereby establishing and maintaining an equable draft for all parts of the fire-chamber.

While starting fire in the stove or to quicken up the fire the damper H is left open, permitting the heated gases to escape directly out of the stove at the escape-pipe O. Upon closing the damper the course of the heated currents, as indicated by the arrows in Figs. 1 and 3, passes over the top of the oven to the descending side flues at the back corners of the stove; thence downward into the flues C C, wherein, in passing forward, they are caught by the deflecting-strips G G, as hereinbefore described, passing which they enter the central flue D; thence along into the ascending flue; and thence out of the escape-pipe O.

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

1. The deflecting-strips G G, in combination with the flues C C and D, as and for the purpose specified.

2. The combination of the strip F and deflecting-strips G G with the flues C C and D, as and for the purpose specified.

3. The damper-seat I, constructed and arranged so as to rest upon the oven-plates, as herein shown and described, to form a support for the top of the stove.

DENNIS G. LITTLEFIELD.

Witnesses:

EDM. F. BROWN,
A. MOORE.