D. L. Stiles.

Domestic Oven.

No. 37,778. Patented Feb 24, 1863.

Fig. 2.

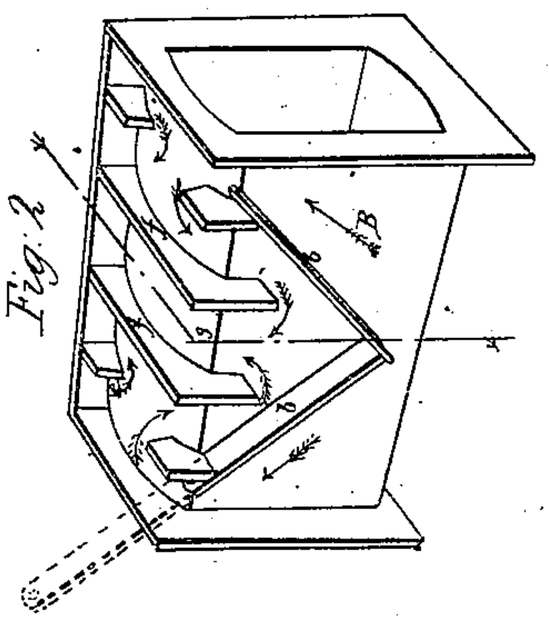


Fig. 1.

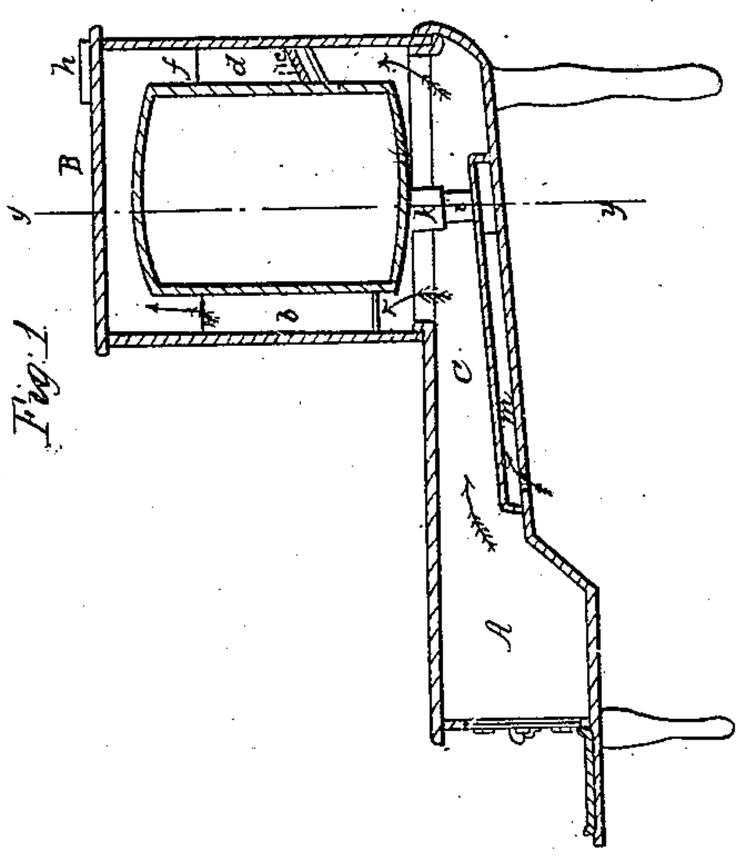


Fig. 4.

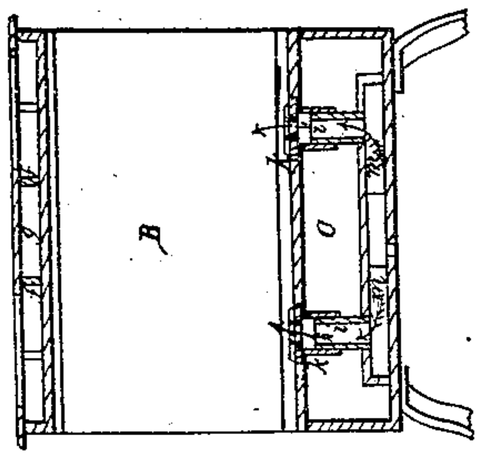


Fig. 3.

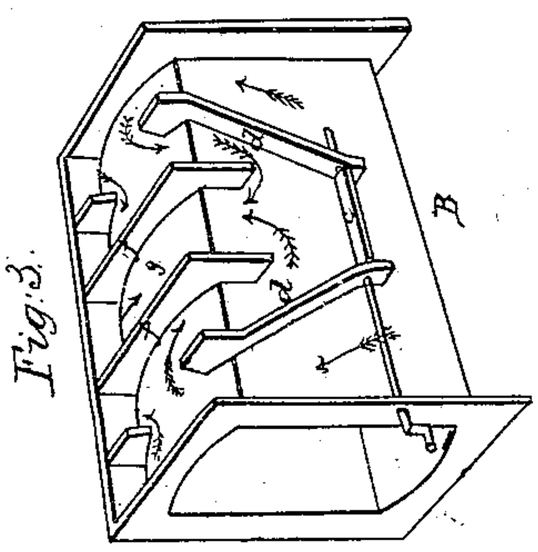
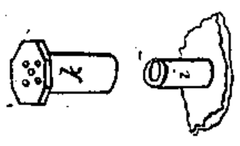


Fig. 5.



Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

DAVID L. STILES, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN COOKING-STOVES.

Specification forming part of Letters Patent No. **37,778**, dated February 24, 1863.

To all whom it may concern:

Be it known that I, DAVID L. STILES, of Rochester, in the county of Monroe and State of New York, have invented a new and Improved Mode of Constructing Cooking-Stoves; 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, in which—

Figure 1 is a vertical section of the stove, showing the oven, on the line *x x* of Fig. 2. Fig. 2 is a perspective view of the oven with the top and front plates removed. Fig. 3 is a perspective view of the oven with the top and back plates removed. Fig. 4 is a section on the line *y y* of Fig. 1. Fig. 5 is a detached perspective view of the ventilating tubes and thimbles *i k*.

Like letters designate corresponding parts in all of the figures.

My improvements relate to that class of stoves known as "elevated-oven" stoves.

As represented in the drawings, B is the oven portion, which rests on the fire or heating portion, and is held in position by flanges on the latter, which connect with the edges of the side and end plates of the oven. A is the fire-chamber, and C the throat or large flue-space directly underneath the oven. Here the heated column is divided, and ascends in equal portions up the front and back sides of the oven. Each of these columns is again divided in front by the inclined flue-plates or partitions *b b*, Fig. 2, which deflect the ascending currents and force them to the extreme upper and outer corners of the oven—those portions which they usually fail to reach fully—and on the back by similar partitions, *d d*, which differ from the former only by terminating before their lower ends meet, in order to leave space for the damper *c*. The columns of air which ascend these front and back flues meet on the top of the oven, but are caused to return by the two partitions *f f*, which carry the heated air partially down the front and back sides between the inclined partitions *b b* and *d d* until those flues unite in the central space, *g*, which communicates with the smoke-pipe *h*. This arrangement overcomes a difficulty common in all ovens, and more especially elevated ovens—viz., the imperfect heating of the ends and corner portions, those which, from their position being most remote from the fire, are more rapidly cooled. The heated currents are forced to seek those parts before their heat is spent by pursuing the tortuous course of the flues, and afterward passed around the central portions of the oven, (which, not being exposed to cold air, does not lose its heat so rapidly), and thus the heat is equally distributed to all parts. The damper *c*, when open, allows the heat to pass directly to the smoke-pipe when the oven is not used.

I am aware that stoves have been constructed which take the heated air up at the corners and down through the descending flues, returning it under the bottom; but these do not fully accomplish the object of my invention, as the current of hot air cannot be made to fully penetrate the angles without being deflected to those points. Besides, the arrangement of those to which I allude is complicated, requiring a damper in front, and the lower or fire portion of the stove must be constructed to correspond with the flues of the oven portion. This is not the case with mine, as all the flue-divisions are contained in the oven portion, the throat C, below, being only a single capacious area, which lessens the expense of construction considerably, and enables the oven portion to be used on any other stove of suitable size with the same effect. It also possesses the advantage of placing the flue-plates and damper so far from the intense heat of the fire that they are far more durable than in other stoves.

The front inclined flue-plates, *b b*, are so constructed that they can be drawn up, as represented by dotted lines in Fig. 2, to allow the dust and ashes which accumulate above them to fall into the space below, where it is removable. They are supported by flanges which allow them to move readily.

In all flues surrounding stove-ovens there is a constant accumulation of dust and ashes, which, in those having vertical flue-partitions, readily falls to the bottom, where it can be conveniently removed; but where the flues are much inclined, the deposited dust remains where it falls, seriously obstructing the flues by diminishing their area. This would be the case with the front flues of my stove if provision were not made for clearing them by raising the movable partitions *b b*, whereby the

dust which has accumulated at their junction is allowed to fall into the space C underneath the oven. The top of each flue-plate *b* projects by that portion of the partition which extends upon the top of the oven, and is provided with a hole, by means of which arrangement it may easily be seized by the hand or by any hooked instrument inserted through the holes in the top of the oven and the object accomplished. Air is admitted just back of the fire-chamber into a conducting-space, *m*, by which it is carried directly under the oven, where it branches in either direction and discharges through small tubes *i i* into the interior of the oven. The tubes are fixed to the stove-bottom, but they are covered by the thimbles *k k*, which have a perforated cap, by which they are suspended in the oven-bottom. Being larger than the tubes *i*, they readily slip over them, and present no obstacle to taking off or putting on the oven portion, while they exclude smoke and ashes from entering the oven. The air admitted through them becomes heated in its passage, so as to increase the temperature of the oven materially, and thereby assists in the operation of baking, while at the same time it insures perfect ventilation. Orifices are provided in the front and back sides of the oven for the escape of the exhalations that arise in baking, and thus keep the air within pure.

I do not claim the use of revertible flues in elevated stove-ovens, neither do I claim making flue-plates inclined or diverging for the purpose of distributing the currents of heated air; but

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

1. The flue-plates *b b* and *d d*, conjoined at the bottom, but diverging toward the outer corners at the top of the oven, so that the heated air, in equal columns, is concentrated at those corners as it rises, in combination with the interior flue-plates, *f f*, and movable division-plates *b b*, in elevated-oven stoves, for purpose of equalizing the heat throughout the same, substantially as set forth.

2. I do not claim introducing heated air into the oven, but I claim the arrangement of the loose perforated thimbles *k*, in combination with the stationary heated-air tube *i*, substantially as and for the purposes shown and described.

DAVID L. STILES.

Witnesses:
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