

UNITED STATES PATENT OFFICE.

CHARLES GAGE, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN COOKING-STOVES.

Specification forming part of Letters Patent No. 122,451, dated January 2, 1872.

Specification describing certain Improvements in Cooking-Stoves, invented by CHARLES GAGE, of the city and county of St. Louis, and State of Missouri.

The first part of my invention relates to the construction of an air-heating chamber in front of the grate, between the fire-plate and the front plate, the said air-chamber communicating by diving-flues at each side, with the ash-pit beneath the fire-place. The second part of my improvement relates to the dumping-grate bottom, which is made solid so as to fit the fire-place for wood, and to prevent the passage of air through it. On the under side of the dumping-plate are curved ribs, which, besides stiffening the plates both longitudinally and transversely, serve to deflect the air in its passage beneath the plate and cause it to come in contact with the hottest part of said plate, to cool the latter and to heat the air.

Figure 1 is a perspective view of a portion of a wood-stove embodying my improvements, parts of the outer plates being broken away to exhibit the air-heating chamber in the top front, and one of the diving-flues leading therefrom to the ash-pit. Fig. 2 is a transverse section of the stove through the air-chamber and diving-flues. Fig. 3 is an under perspective view of the dumping bottom plate.

A is the top plate of the stove, and B B² the side plates. C is the hearth-plate, and c the ash-pit. E is the fire-plate, covering the whole front of the fire-space except a small portion immediately over the tilting bottom plate D, the plate E extending to the side plates at each end and to the top plate A, and constituting the back wall of the air-heating chamber H. E² is a corrugated portion of the plate E, the corrugations preventing the warping of the plate by unequal expansion from heat. e is a horizontal forwardly-projecting part of the fire-plate coming in close contact with the plate F and forming the bottom of the air-chamber H, (a portion of e being broken away to show the front edge of the dumping plate, and the course of the air in entering the fire.) e² are the vertically-descending ends of the part e, whose outer edges are in close contact with the front plate F, and which constitute the inner

walls of the diving-flues h. The front plate F has air-orifices f, and in connection with them a sliding register-plate, G, by which the orifices may be partially or wholly closed. By this register more or less air may be admitted into the air-heating chamber H, (extending all across the stove between the plates E and F,) the air becoming heated and passing down the diving-flues h and beneath the fixed and dumping bottom plates D² and D, and then upward between the doors and the plate D, and beneath the edge of the plate E into the fire, as shown by arrows. The joints of the hearth C² and sliding doors I (one of which is removed) are made nearly air-tight, so that all the air to feed the fire may, if desired, be made to enter through the register f G, and beneath the bottom plate of the fire-place. The dumping plate D is supported on pivots d, resting in the plate D², so that it can be turned up on edge to clear the fire-place. d² are curved ribs on the lower side of the dumping plate, said ribs serving to stiffen the plate longitudinally and transversely, and also to deflect the air in its passage from the diving-flues h to the throat T, and cause it to come in contact with the hottest part of the plate—namely, that part in front of the gap d³, between the ends of the ribs. The register f G may, if preferred, be applied to the top plate A immediately over the air-chamber H, and would operate in the same manner as if in the front of the stove, as shown.

I claim as my invention—

1. The combination of the register f G, air-chamber H, and diving-flues h, substantially as and for the purpose set forth.
2. The solid dumping plate D, by which the air is heated and forced to enter into the front of the fire-place, as set forth.
3. In combination with the solid dumping plate D, the deflecting stiffening-ribs d² having a central gap, d³, substantially as set forth.

In testimony of which invention I have hereunto set my hand.

CHARLES GAGE.

Witnesses:

SAML. KNIGHT,
R. T. BRADLEY.

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