A. WISNER.

Lining Plate for Stoves.

No. 87,230. Patented Feb. 23, 1869.

Fig. 1.

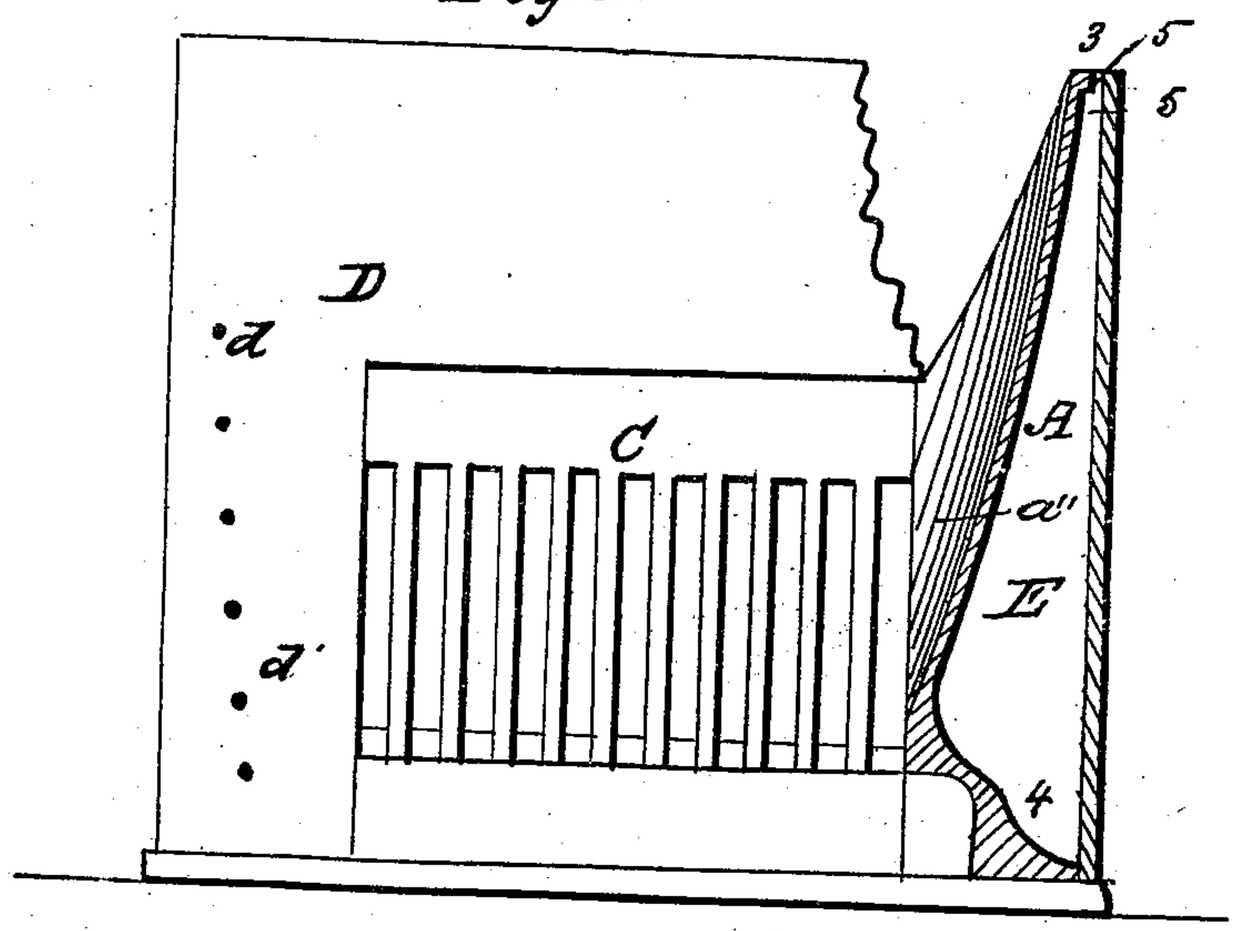


Fig. 2

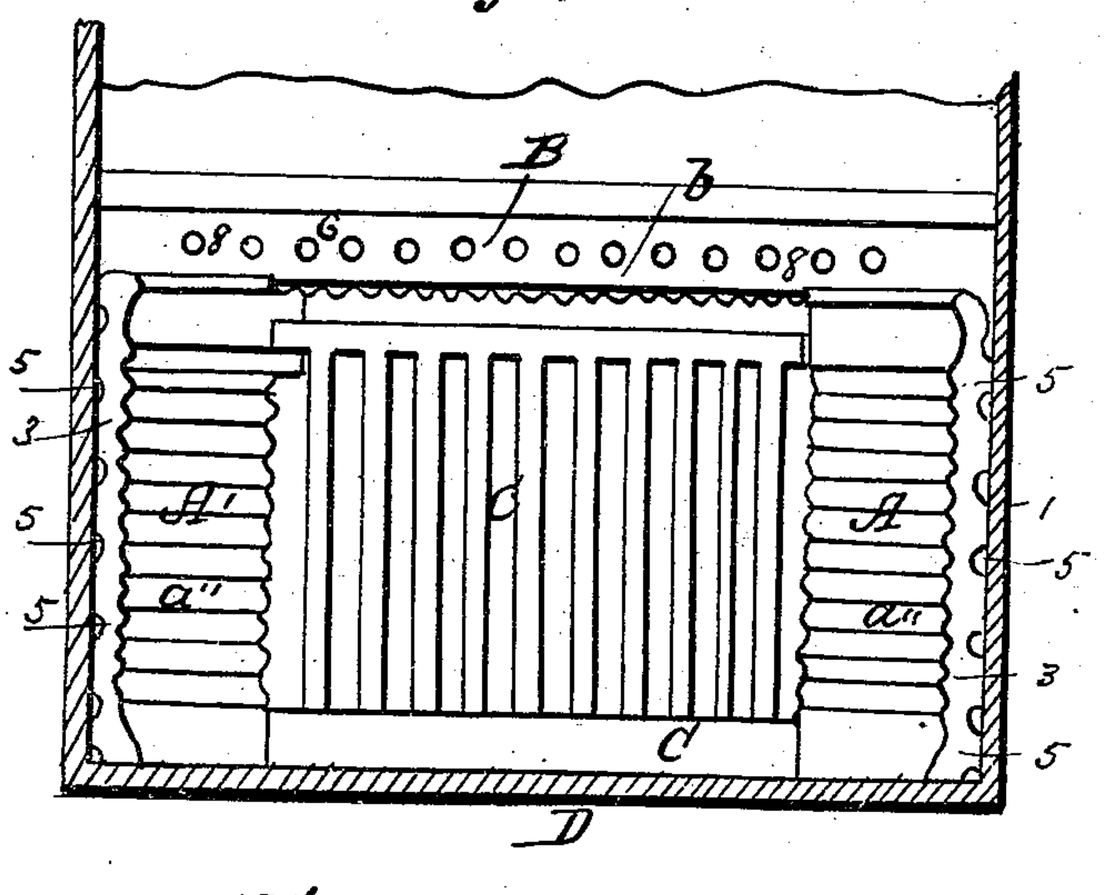
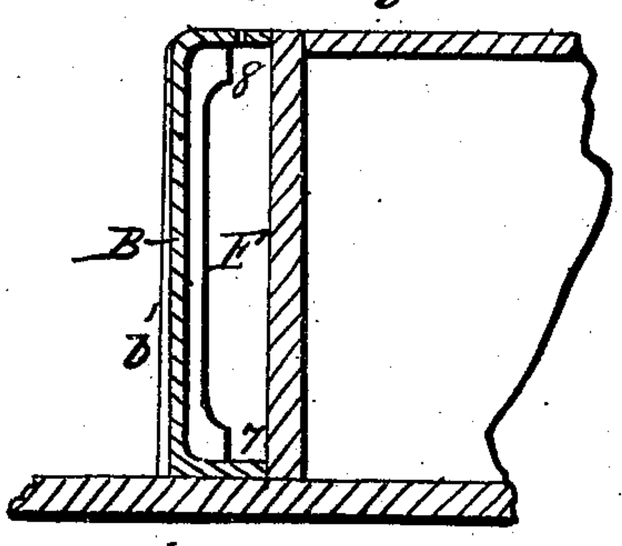


Fig. 3.



Witnesses

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Letters Patent No. 87,230, *dated February* 23, 1869.

IMPROVEMENT IN LINING-PLATES FOR STOVES.

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, ALBERT WISNER, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in the Lining-Plates for Fire-Boxes of Stoves and Ranges; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a front elevation of a stove, having a portion of its front plate broken out, so as to show an edge view of one of the side lining-plates applied;

Figure 2, a sectional plan view of the same stove, having its top plate removed, in order to show the two side lining-plates and the back lining-plate of the fire-box applied; and

Figure 3, a central vertical section of the back lining-plate of the fire-box, as applied to the adjacent plate of the stove.

Like letters and numbers of reference indicate the same parts when in the different figures.

My improvement relates to that class of stoves and ranges which have rectangular fire-boxes, and are fitted either with fire-brick linings, or linings of very thick cast-iron plates, fitting with their backs closely against the adjacent plates of the stove.

The fire-brick linings are very liable to crack and crumble in use, and also to accumulate slag-adhesions from the incandescent fuel, while the thick, solid cast-iron plates are heavy, and therefore too costly, in the first place, and are liable to swell, and become thus permanently warped by the intense heat to which they are sometimes subjected.

The object of my improvement is to obviate all these objections.

My invention consists, substantially as hereinafter described, in the production of cast-iron lining-plates, which will be comparatively light or thin, and capable of allowing a continuous and copious passage of cold air between their backs and the adjacent plates of the stove, so as to prevent them from becoming overheated, and consequently expanded and warped permanently thereby.

Referring to the drawings—

A and A′ are the two corresponding side lining-plates, and B, the back lining-plate, constituting, together with the grate C, front plate D, and the other adjacent plates of the stove, the fire-box.

Each of the two side-plates, A A′, has a comparatively thin body, *a″*, which is fluted or ribbed vertically on its fuel-side, and has a laterally-projecting edge, 3, along the rear side of its upper end, which edge, 3, fits closely along against the adjacent plate of the stove; and also, a laterally-projecting foot, 4, along on the rear side of its lower end, which foot, 4, fits closely along against the lower part of the same adjacent plate, the thin fluted portion or body *a″* sloping downward to the grate C, and leaving a capacious air-chamber or space, E, between it and the said adjacent plate of the stove. (See fig. 1.)

The projecting edge 3 has a series of small holes or semicircular openings, 5–5, down through it. (See fig. 2.)

The back edges of both the plates, A and A′, fit closely against and partly over the front side and top edge of the back plate B. (See fig. 2.)

The back plate B has a lateral projection, 6, along on the rear side of its upper end, and a like projection, 7, along on the rear side of the lower end, (see fig. 3,) its front or body, *b′*, being comparatively thin, and fluted or ribbed vertically on its outer, or face-side.

The projection 6 has a series of small holes, 8, through it, and, when the plate is in place, the projecting edges 6 and 7 fit closely along against the adjacent plate of the stove, and thus produce a capacious air-chamber, F, between them, which communicates, by its open right and left sides, with the respective air-chambers E, which are behind the side-plates A and A′. (See figs. 1 and 2.)

Through the front plate D of the stove, a series of small holes, *d′ d′*, is made, along near each of the two side edges of the said plate, which communicate with the respective air-spaces or chambers E. (See fig. 1.)

In the operation of a stove or range, fitted with these, my improved lining-plates, as set forth and described, it will be seen that the external or cool air will be constantly passing through the air-chambers E, E, and F, into the upper part of the fuel-chamber, above the respective plates A, A′, and B, and will thus prevent the latter from becoming overheated and warped, and that, being comparatively thin and light, they will be much less costly of production, and more durable than either the well-known fire-clay lining-bricks, or the thick, solid, heavy, iron plates heretofore used for the purpose.

Having thus fully described my improvement,

What I claim as new therein, of my invention, and desire to secure by Letters Patent, is confined to the following, viz:

I claim the cast-iron plates A A′ B, when constructed and applied substantially in the manner and form set forth and described, and operating in combination with the air-supplying holes *d′ d′*, in the front plate D, or its equivalent, as and for the purpose described.

ALBERT WISNER.

Witnesses:

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