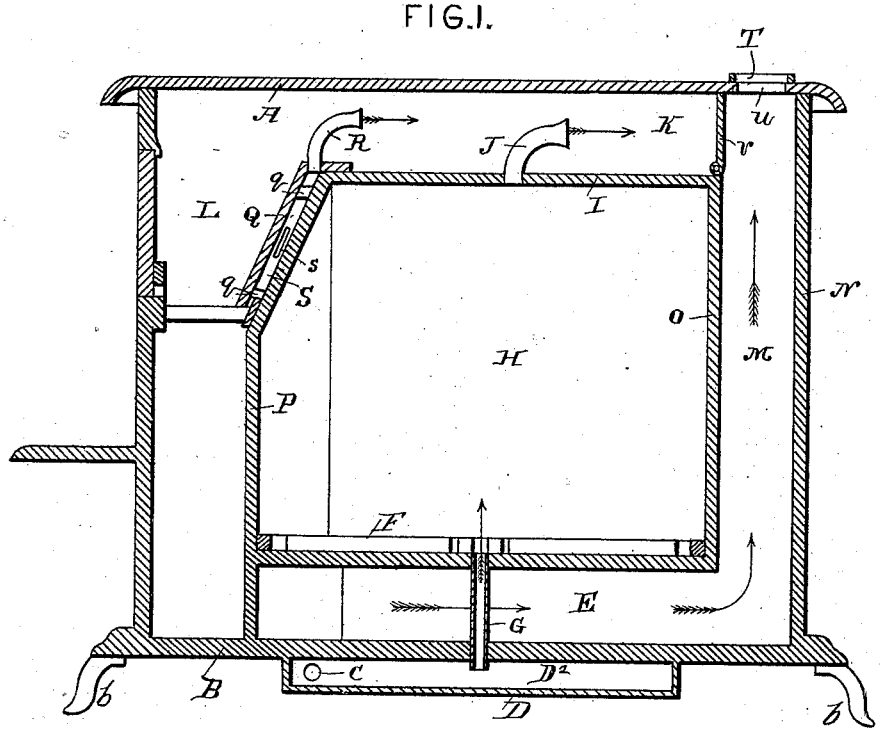
(No Model.) 3 Sheets—Sheet 1.

J. RAU.

OVEN FOR COOKING STOVES.

No. 383,147. Patented May 22, 1888.

FIG. 1.



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John Rau.

(No Model.) 3 Sheets—Sheet 2.

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OVEN FOR COOKING STOVES.

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FIG. 2.

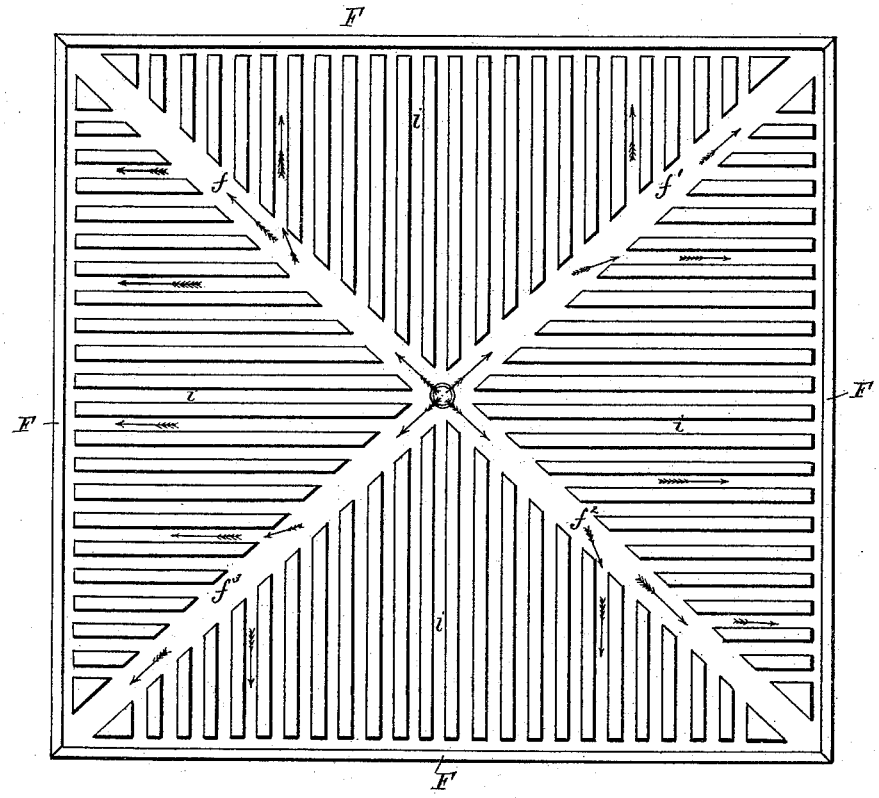
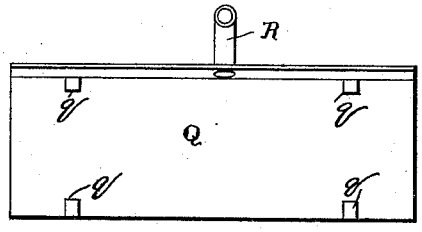


FIG. 5.



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(No Model.) 3 Sheets—Sheet 3.

J. RAU.

OVEN FOR COOKING STOVES.

No. 383,147. Patented May 22, 1888.

FIG. 3.

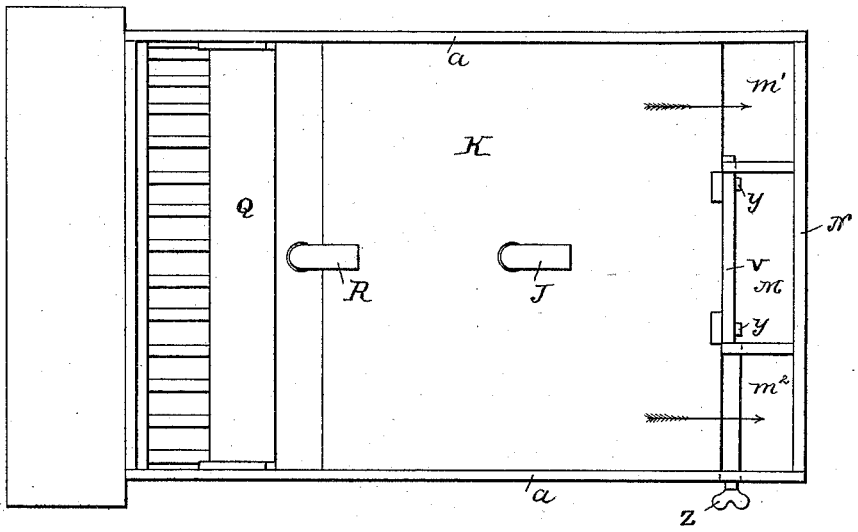
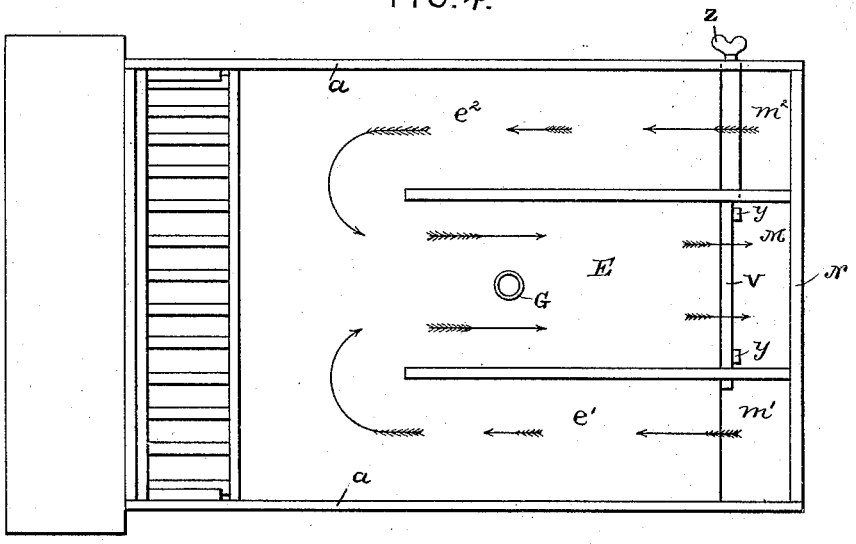


FIG. 4.



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UNITED STATES PATENT OFFICE.

JOHN RAU, OF BELLEVILLE, ILLINOIS.

OVEN FOR COOKING-STOVES.

SPECIFICATION forming part of Letters Patent No. 383,147, dated May 22, 1888.

Application filed March 31, 1887. Serial No. 233,118. (No model.)

To all whom it may concern:

Be it known that I, JOHN RAU, a citizen of the United States, residing at Belleville, in the county of St. Clair and State of Illinois, have invented certain new and useful Improvements in Cooking-Stoves, of which the following is a specification.

My invention relates to improvements in cooking-stoves in which air is admitted into the oven to ventilate it; and the objects of my improvements are to heat the ventilating-air before admitting it into the oven and direct it therefrom into the smoke-passages, and also to admit a current of air between the fire-pot lining and the adjacent wall of the oven, to prevent overheating of the latter at that point. I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of a baking-stove constructed in accordance with my invention. Fig. 2 is a top view of the bottom plate of the oven thereof, showing the central tube and the grooves or air-passages therein. Fig. 3 is a plan view of the stove with the top plate removed. Fig. 4 is a top view of the bottom plate of the stove, showing the smoke-flues thereon. Fig. 5 is a rear view of the fire-pot lining.

Similar letters refer to similar parts throughout the several views.

In said drawings, A represents the top plate of the stove; B, the bottom plate supported on legs *b*. To the under side of said bottom plate is attached or formed integral therewith a flanged plate, D, forming therewith a shallow air-chamber, D^2, into which air is admitted through a pipe, C, entering the side thereof near its front end. The ceiling of the chamber D^2 is formed by the plate B, and through the center thereof passes a vertical pipe, G, that extends through the bottom passage or flue, E, of the stove and through the plate F, constituting the bottom plate of the oven. The chamber D^2 being of nearly the same length and width of the oven, the air that enters therein has a large heating-surface against the plate B, and passing through the heated pipe G enters the oven H at a high temperature. To cause said heated air to circulate evenly upon the floor of the oven and under a pan that may be placed therein, the upper surface of the bottom plate, F, of said oven is provided with wide grooves *f'*, that radiate from the central vertical tube, G, and a series of narrower parallel grooves, *i*, intersecting the radial grooves *f'*. After the heated air has ascended to the top of the oven, it escapes through a rearwardly-bent pipe, J, into the upper smoke-flue, K, leading the products of combustion directly from the fire-pot L, carrying at the same time the escaping air from the oven toward the damper *v* and the uptake *w*, if said damper is down; but if the damper is up the hot air and gases descend through the flues m' m^2 to the under side passages, e', e^2, and E, of the oven, and ascend again through the middle flue, M, to the uptake *w* and T, the latter being an annular projection to receive a stove-pipe.

To properly ventilate the oven with warm air, the inlet *c* should be the same diameter as the outlet-pipe J; but the pipe G should be of smaller diameter, to give the air time to become heated in the bottom chamber, D^2, before being admitted into the oven. To keep the upper portion of the oven at nearly the same temperature as the bottom, and to prevent the destruction or burning of the lining Q of the fire-pot L, or of the front plate, P, of the oven, the lining-plate Q is provided with lugs *q*, to keep it away from the plate P a sufficient distance to form an air-passage, S, between them. Air enters said passage through small slots or openings *s* in the sides of the stove opposite the passage S, and it escapes from said passage through a short bent pipe, R, leading into the upper flue, K, of the stove.

I am aware that the ovens of stoves have been ventilated by means of air admitted through small perforations in the doors thereof and allowed to escape through perforations in the top of the oven. I am also aware that the bottom plate of said oven has been made of sheet metal, having corrugations to facilitate the expansion and contraction of said sheet metal.

Having now fully described my invention, I claim—

1. The combination of the bottom plate, B, of a stove and the pipe G, ascending therefrom, with the bottom oven-plate, F, receiving said pipe substantially in the center thereof,

and having grooves in its upper surface radiating from said pipe G, substantially as and for the purpose described.

2. The combination of the side plates of a stove having openings *s*, the front plate, P, of an oven, and the fire-pot lining Q, having lugs *q* on the rear thereof, and forming with said plate P an air-passage, S, with a pipe, R, leading from said passage into the upper smoke-passage, K, of the stove, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN RAU.

Witnesses:
HARRY L. AMER,
E. C. WURDEMAN.