(No Model.)

2 Sheets—Sheet 1.

J. M. KILLIN.

COOKING STOVE.

No. 249,636. Patented Nov. 15, 1881.

Fig. 1.

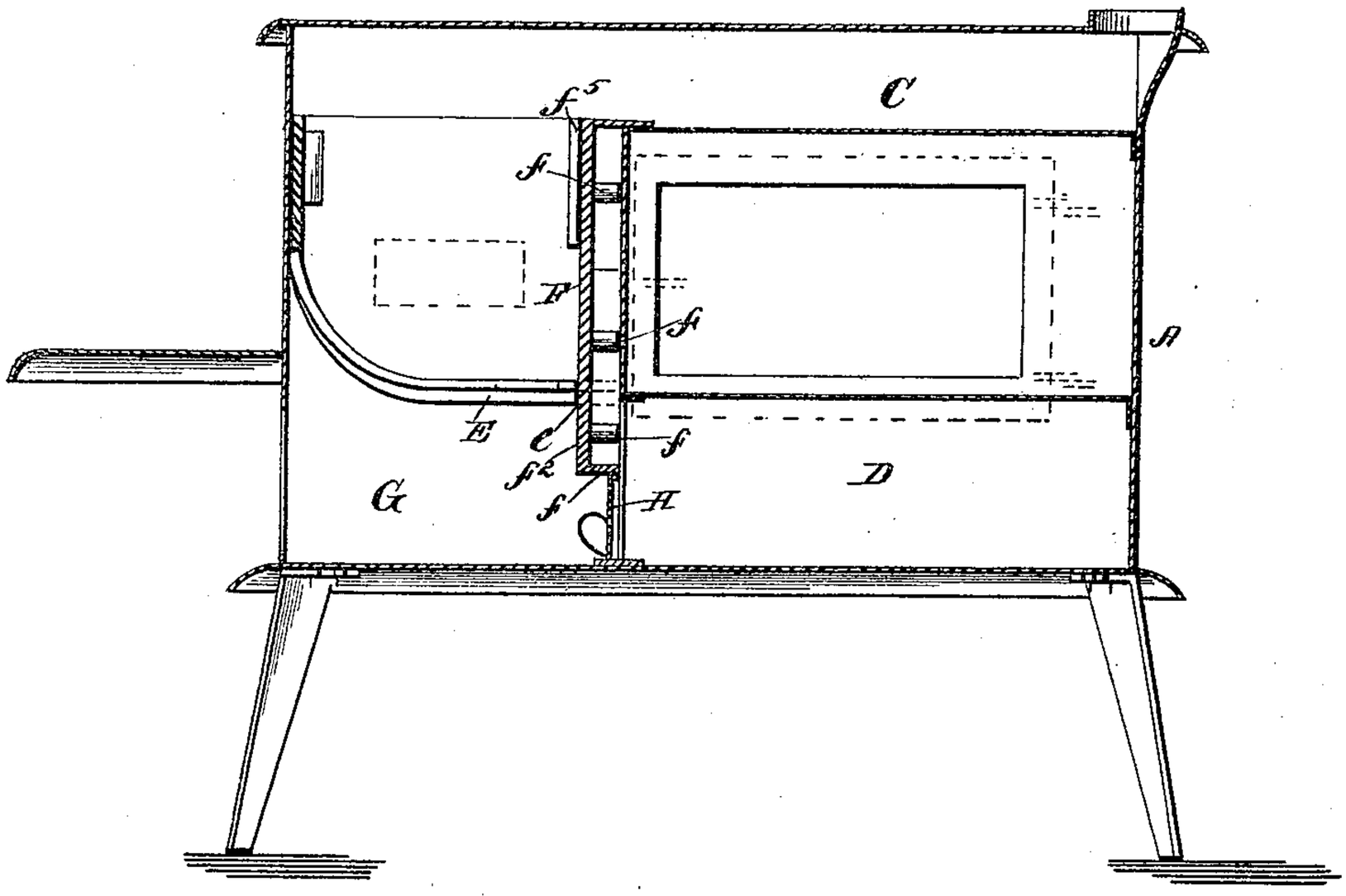
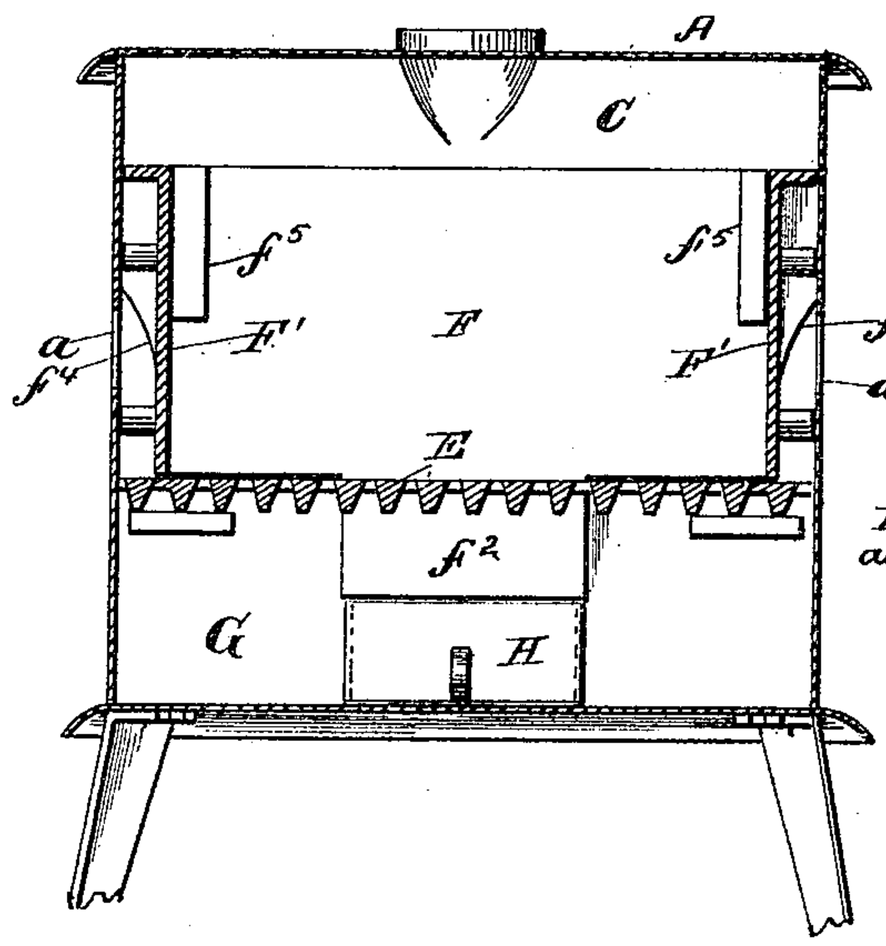


Fig. 2.



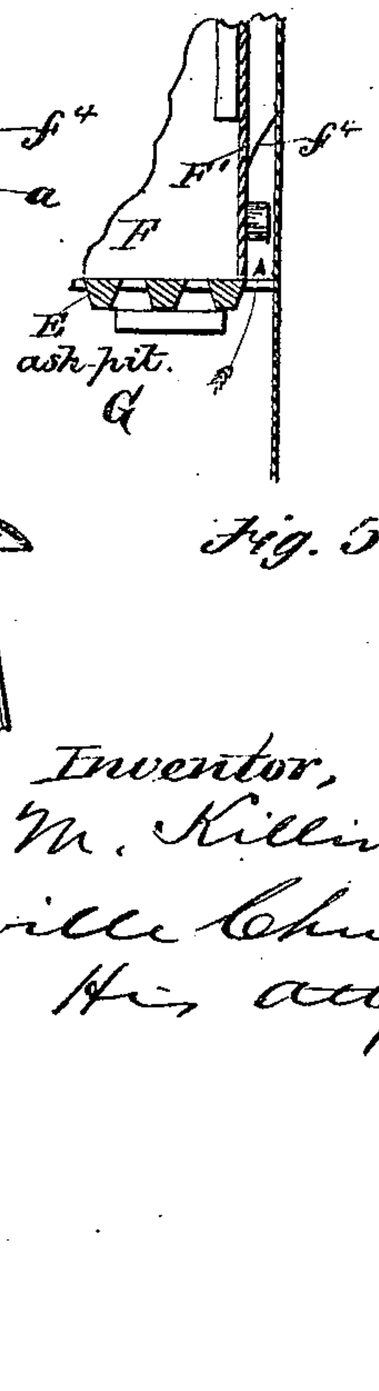


Fig. 5.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

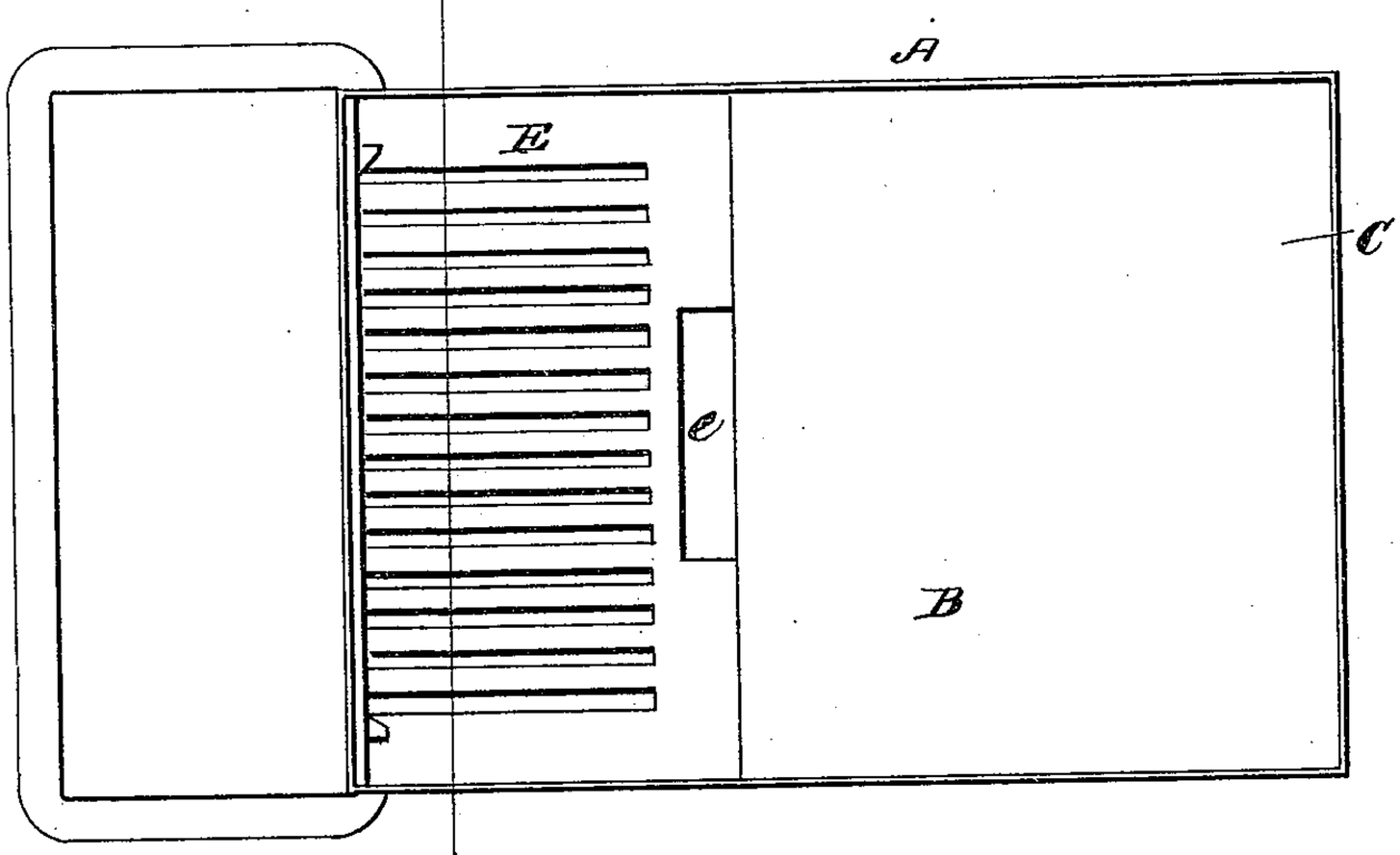
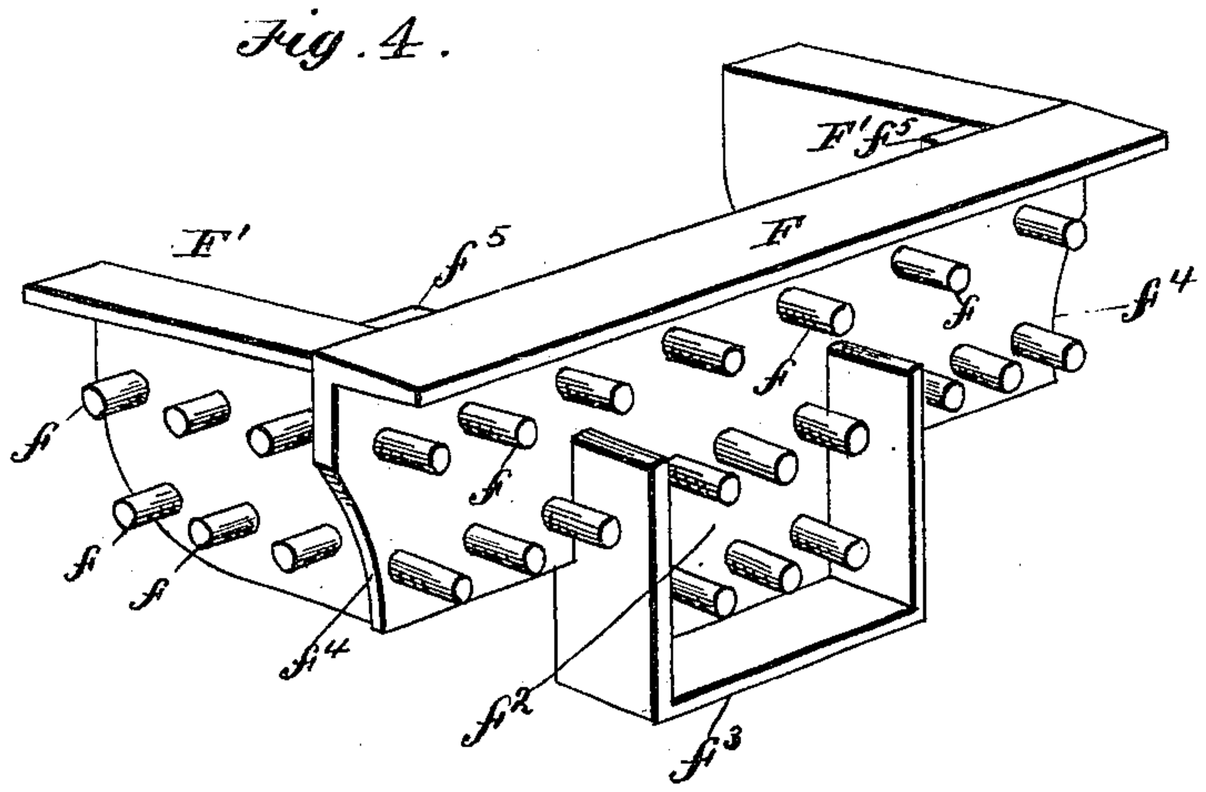


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN M. KILLIN, OF PITTSBURG, PENNSYLVANIA.

COOKING-STOVE.

SPECIFICATION forming part of Letters Patent No. 249,636, dated November 15, 1881.

Application filed September 20, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. KILLIN, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Cooking-Stoves; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal section of a cooking-stove containing my improvements. Fig. 2 is a cross-section of the same; Fig. 3, a top-plan view of the same with the fire-back removed; Fig. 4, a perspective view of the fire-back detached, looking from the rear; and Fig. 5, a sectional view of a modification, in which the air is admitted behind the fire-back from the ash-pit.

Similar letters of reference in the several figures denote the same parts.

My invention relates to improvements in cooking-stoves; and it consists in certain novelties of construction, which I will now proceed to describe.

In the drawings, A represents the frame of the stove; B, the oven; C, the flue above the oven; D, the flue below the oven; E, the grate; F F′ F′, the parts composing the fire-back, and G the ash-pit.

The parts of the fire-back are made of metal, and are provided on their rear sides with projections or studs *f*, also of metal, cast upon or attached to them, and located at such distances apart as to permit a free circulation of air. These projections of course absorb the heat of the body of the fire-back, but by presenting a large radiating-surface throw it off again rapidly into the air circulating between them.

In the particular embodiment of my invention shown in the drawings the rear portion, F, of the fire-back is provided with a central lower extension, f^2, which projects down through an opening, *e*, in the rear portion of the grate, and is surrounded on three sides by an air-inclosing flange, f^3. Said extension also extends down in front of and partially closes the opening leading to the return-flue D under the oven, the remainder of said opening being covered by a damper, H, as shown in Fig. 1. The said rear part, F, at its ends is cut away somewhat, as shown at f^4 f^4, to form a passage-way for air from behind the end parts, F′ F′, and it is preferably further provided with lugs f^5 f^5, behind which the end parts F′ F′ are slipped and retained. The casing behind the end parts, F′ F′, is provided with openings *a a*, for the admission of air behind said parts. When the stove is in operation the parts F F′ F′, forming the fire-back, of course become highly heated, and their heat is in turn communicated to the projections *f* on their rear sides. The external air, however, rushing in behind the parts F′ F′, passes between the projections thereon, and thence in behind the part F, and through between the projections thereon also. It thence passes down behind the extension f^2, being prevented from escaping by the flanges f^3, and into the flue below the oven. The air, in its passage, while in a measure cooling the fire-back itself, becomes highly heated, so that upon its arrival in the return-flue under the oven it is in condition to heat the latter in the most efficient manner.

Instead of taking the air through the openings *a a* in the sides of the stove-casing, it may be taken through openings in the ends of the grate-frame from the ash-pit below, as shown in Fig. 5.

Having thus described my invention, I claim as new—

1. The fire-back consisting of the rear part and the two end parts, each having the projections on its rear side, combined with a stove-casing, and with air-passages which permit the passage of air from the end parts to the rear part, substantially as described.

2. The rear part of the fire-back, provided with projections, as described, and having the ends cut away, to permit of the passage of air from the end parts of the fire-back behind said rear part, substantially as described.

3. The rear part of the fire-back, provided with the projections on its rear side, and having the downward extension passing through the opening in the grate, combined with said grate and the return-flue under the oven, substantially as described.

4. The rear part of the fire-back, provided with the projections, as described, and having

the lower extension, around three sides of which extends the inclosing-flange, substantially as described.

5. The combination of the rear and end parts of the fire-back, provided with projections, as described, of the grate having the opening for the reception of the lower extension of the rear part of the fire-back, the casing constructed with openings for the admission of air behind the end parts, and the flue beneath the oven, substantially as described.

JOHN M. KILLIN.

Witnesses:
JOHN S. KENNEDY,
THOS. LEMON.