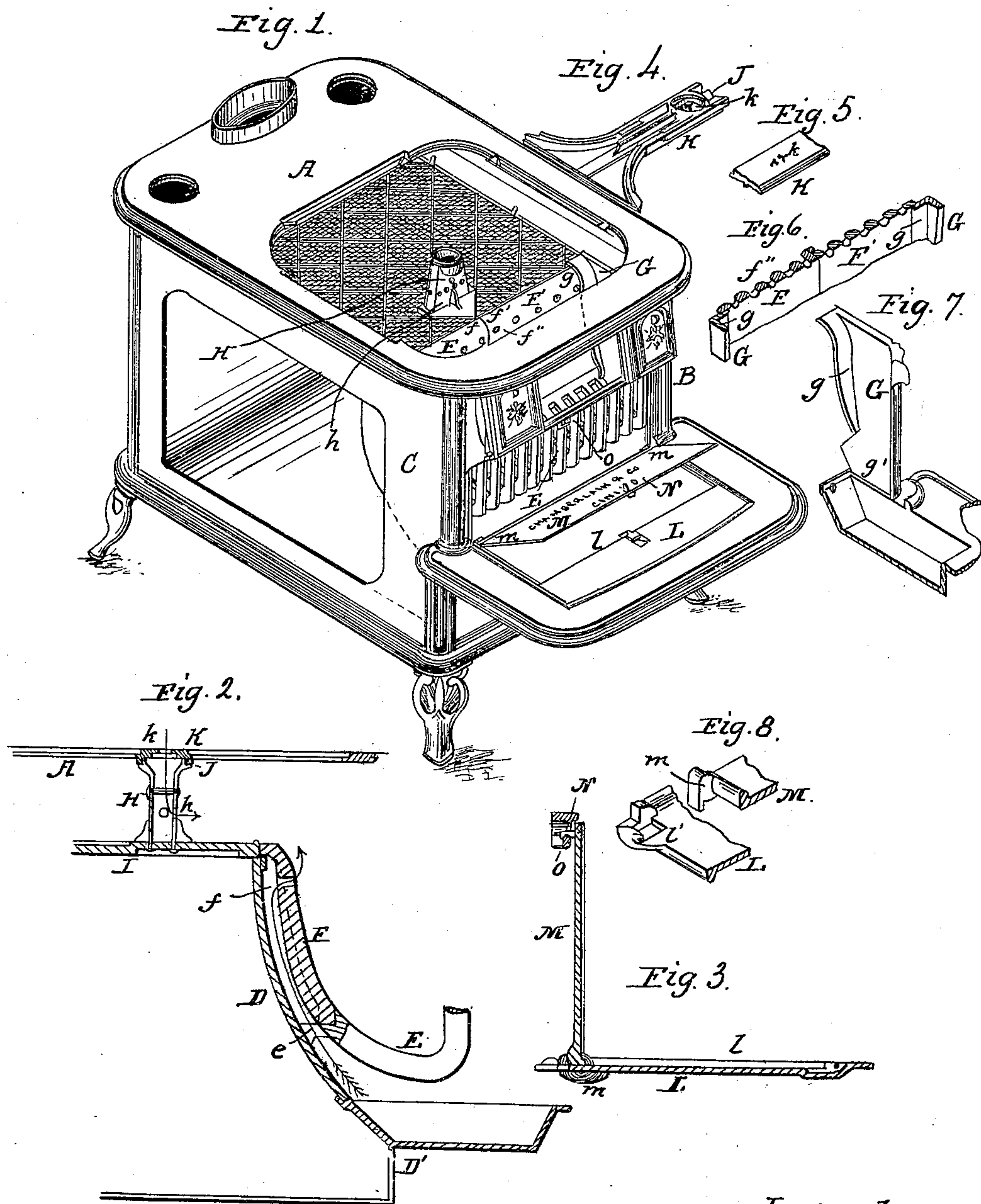


J. B. CROWLEY.
Cooking Stove.

No. 53,732.

Patented April 3, 1866.



Witnesses:
Shirleywood.
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UNITED STATES PATENT OFFICE.

JOHN B. CROWLEY, OF CINCINNATI, OHIO, ASSIGNOR TO CHAMBERLAIN & CO., OF SAME PLACE.

IMPROVEMENT IN COOKING-STOVES.

Specification forming part of Letters Patent No. 53,732, dated April 3, 1866.

To all whom it may concern:

Be it known that I, JOHN B. CROWLEY, of Cincinnati, Hamilton county, Ohio, 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 thereof, reference being had to the accompanying drawings, making part of this specification.

My improvements relate chiefly to an arrangement of the fire-place and its immediate surroundings, by which, while dispensing with several parts hitherto deemed essential, I secure more perfect economy of fuel with less injury to the stove by burning out and sagging of the plates, &c., in immediate contact with the fire.

Figure 1 is a perspective view of a cooking-stove embodying my improvements. Fig. 2 is an enlarged longitudinal section of the front upper corner of the oven and parts immediately adjacent. Fig. 3 is an enlarged transverse section of the hearth-plate. Fig. 4 shows a portion of the under side of the center plate. Fig. 5 shows the middle portion of the center plate viewed from above. Fig. 6 is a horizontal section of the fire-back taken at the draft-apertures. Fig. 7 is a perspective view of a jamb-plate and that portion of the hearth-plate on which it rests. Fig. 8 is a perspective view of the hinges by which the flap is connected to the hearth-plate.

A B C represent, respectively, the top, front, and a side plate of a cooking-stove. The oven-plate D nearest the fire is curved forward as it descends, so as to support the rear edge of my grate E without the intervention of the customary bearing-plate. The grate E, however, does not rest continuously upon the oven-plate, but by two or more feet, *e*, so as to leave between the said plate and the back bar of the grate a passage for draft-air. (See red arrow in Fig. 2.)

My fire-back is composed of two or more plates, F F, rabbeted at *f*, so as to overlap their continuous edges. The rabbeted ends of the plates F F are secured from shifting to the right or left by means of nicks and projections *f'*, while the ends of the said plates engage under the flanges *g* of the jamb-plate G in such a way as to allow the said back plates

to expand and contract freely with the changes of temperature.

The above-described divided and overlapping construction of back plates, with provision for unrestricted expansion or contraction of their outer ends behind the jamb-plates, entirely prevents the inconvenient bulging forward into the fire-place of the customary fire-back, held tightly as it is by the jamb-plates at its ends, so as to forbid expansion or elongation.

The plates F F, instead of being supported on legs or a bearing bar or plates, rest upon the rear edge or bar of the grate itself at such relative distance from the oven-plate as to afford a passage for the entrance of the draft-air before spoken of, which air, after serving to reduce or tone down the excessive heat of the fire-back, enters the fire-space in the form of numerous small heated jets through the apertures *f* in the back plates, F F, and operates to consume the smoke.

The jamb-plates G, instead of terminating on a level with the grate-bottom and resting on ledges or projections from the side plates, are prolonged downward at *g*, so as to rest upon the hearth-plate or fire-bottom. This arrangement, besides simplifying the parts, acts to confine the fire-draft and ashes and smoke, which now give trouble by escaping through the cracks and interstices in the sides of the stove, and directs the entire débris into the ash-pit.*

H is a hollow column, stand, or rest, which is cast or bolted or riveted fast to and rises from the top oven-plate, I. This column is at bottom oblong in its horizontal section, but assumes a circular shape at top to form a seat for a circular rim, J, on the under side of the center plate, K. The rest H is perforated (*h*) toward the fire and laterally, so as to afford one or more air-inlets direct from the outside through apertures *k* at the middle of the center plate, K, and through the rest into the fire.

By the above arrangement the several useful purposes are served of keeping cool the center plate and rest, and preventing their sagging and burning out, and of supplying warm divided currents of draft-air to the fire and smoke.

The correspondingly-circular form of the

rest H and rim I causes the center plate to be equally well supported whether in the longitudinal or in the transverse position.

I dispense entirely with the customary fire-doors, and yet provide a means of completely closing the fire-front by the following arrangement: I form the hearth in two pieces, of which the lower and larger one, L, occupies and closes in the usual way the entire area of the ash-pit in front of the fire. That portion of the hearth-plate nearest the fire has a sink or depression, *b*, whose width from side to side and from front to back are, respectively, equal to the width and height of the fire-front. Tilted to snugly occupy the sink *b* is a flap, M, having legs *m*, which occupy sockets *b'* in the hearth-plate. The peripheries of the legs *m* are formed eccentric with the center of vibration *x* of the flap, so that when the flap is swung upward to close the fire-front the said legs act to shift back the lower edge of the flap, so as to bring it over the hearth-plate, and thus completely close the opening, and they also, by engaging under the hearth-plate, hold the flaps to a perpendicular position. (See Fig. 3.) The flap M has a hook, N, which, engaging in an eye, O, in the front plate, serves to hold the flap securely and snugly to the closed position.

The above arrangement thus differs from those in which a hearth-plate has been employed to close the fire-front in that the hearth-plate proper, remaining intact and in place, serves as a fulcrum or bearing for the hinges of the flap, together with which it completely closes the opening. The flaps, moreover, being hung on hinges, and being provided with a catch, accurately and securely close the fire-front.

By reference to Fig. 2 it will be seen that I bring my oven forward to the extreme front of the stove without the intervention of a front flue or chamber, thus securing a large oven-place and a more equable heat at this part, the intensely-heated proximity of the fire-chamber being counteracted by the direct exposure to the atmosphere of the lower front oven-plate, D.

I claim herein as new and of my invention—

1. A fire-back of a cooking-stove, composed of two or more overlapping or rabbeted plates, F F, secured at the mid-width of the stove, while permitted unrestricted elongation toward the sides of the stove, substantially as set forth.

2. The hollow perforated stand or rest H, in combination with a center plate perforated at its middle portion, substantially as set forth.

3. A stand or rest having a circular or other symmetrical head, which fits a corresponding rim on the under side of the center plate, for the purpose of support and reversal, as explained.

4. The arrangement of depressed hearth-plate L *l l*, flap, eccentric legs *m*, hook N, and eye O, as herein described.

5. The jamb-plate G *g*, formed and arranged in the manner and for the purpose set forth.

In testimony of which invention I hereunto set my hand.

J. B. CROWLEY.

Witnesses:

GEO. H. KNIGHT,
JAMES H. LAYMAN.