No. 843,643. PATENTED FEB. 12, 1907

E. G. VAN WIE.

STOVE.

APPLICATION FILED JAN. 16, 1906.

2 SHEETS—SHEET 1

Fig. 1.

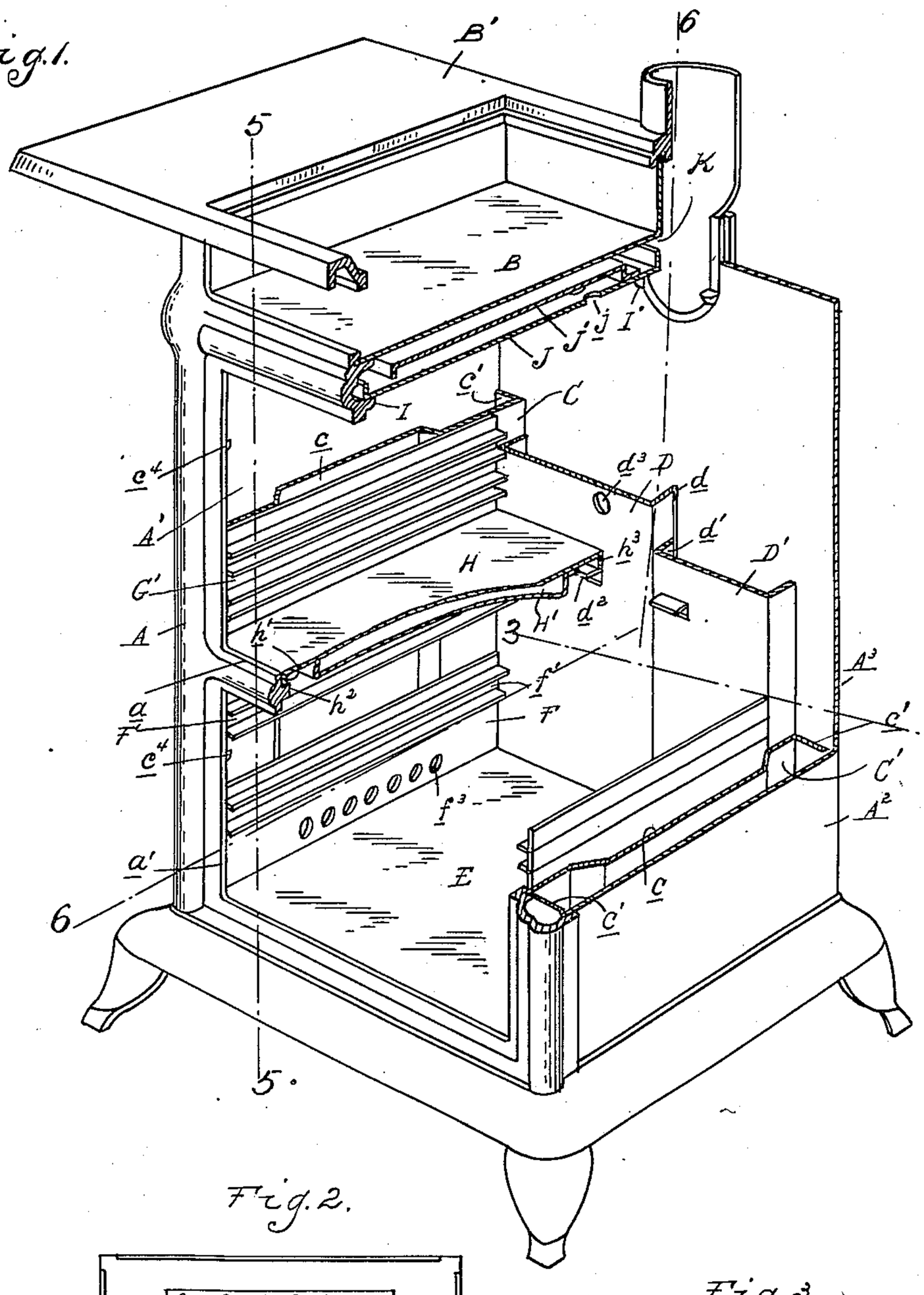


Fig. 2.

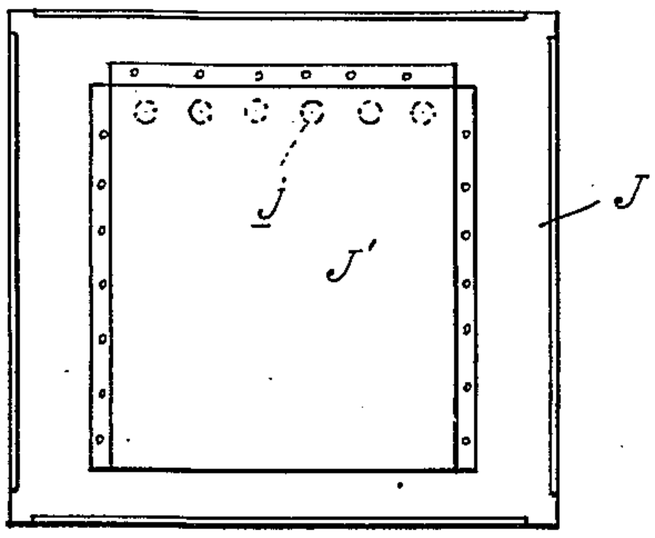
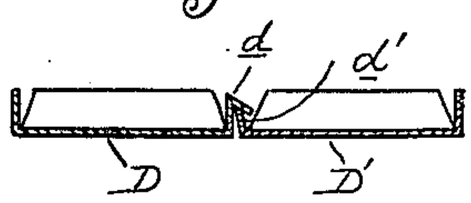


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

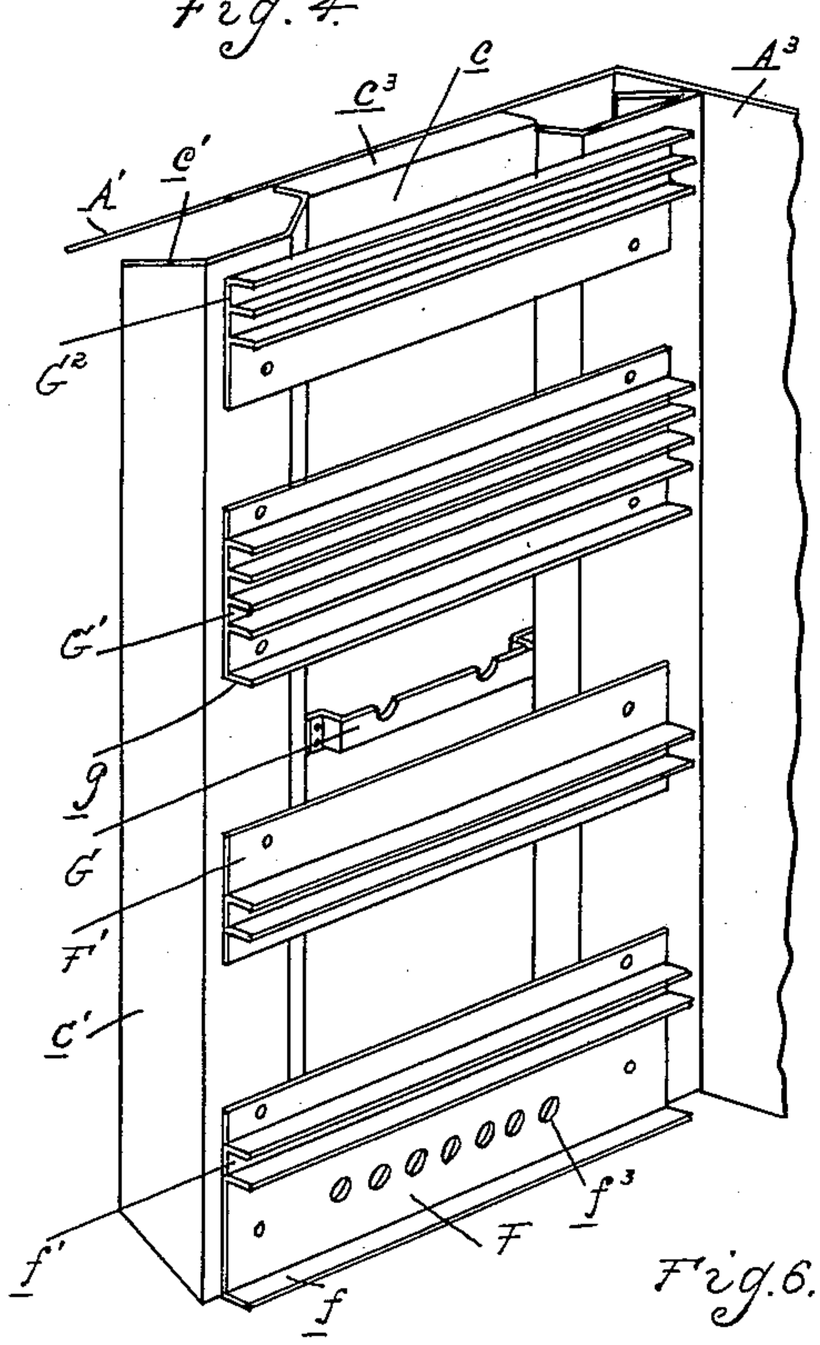


Fig. 5.

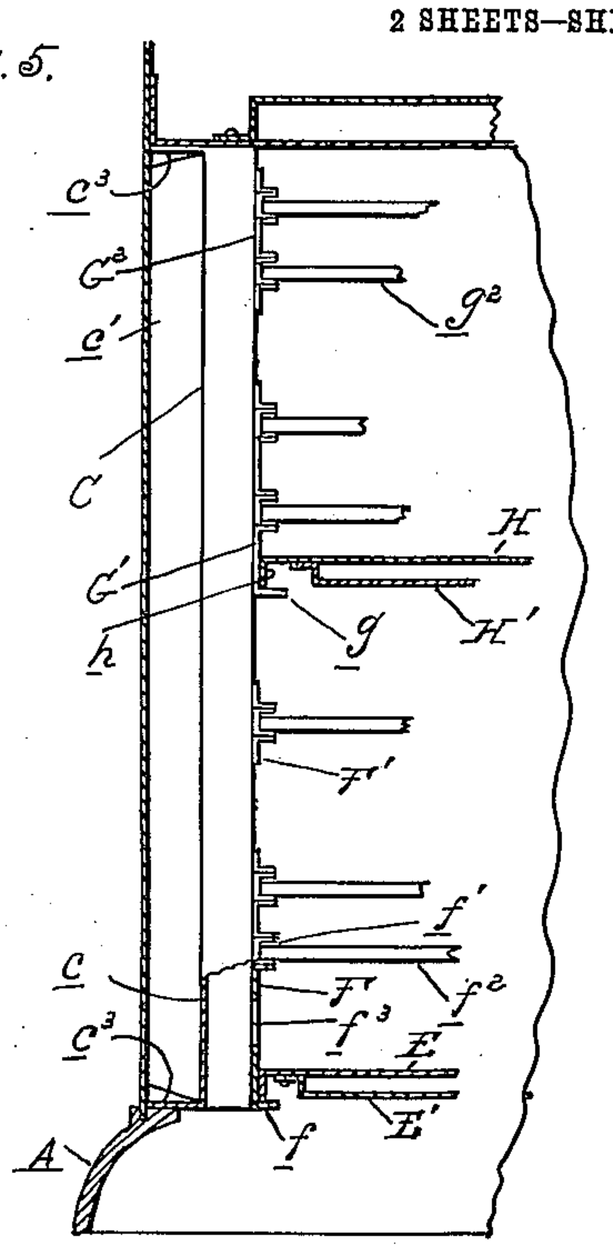
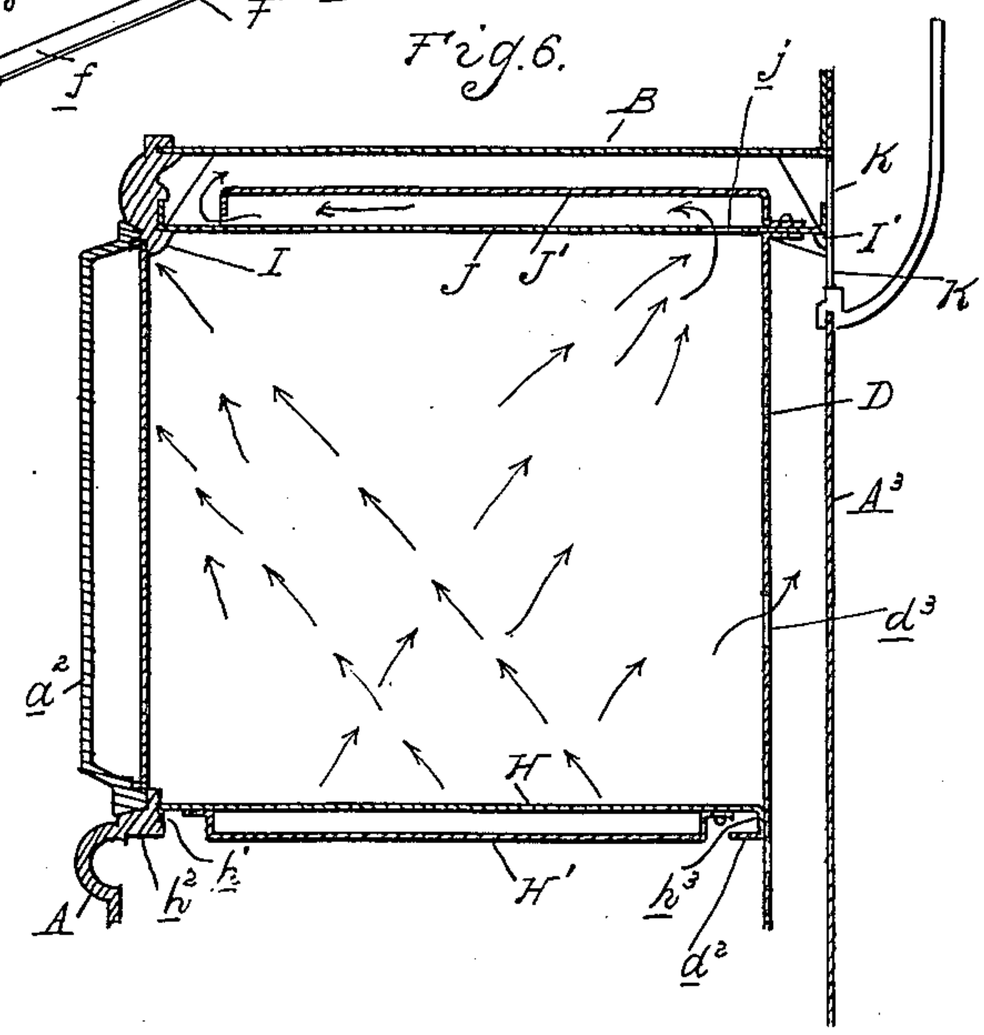


Fig. 6.



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UNITED STATES PATENT OFFICE.

EDWIN G. VAN WIE, OF DETROIT, MICHIGAN, ASSIGNOR TO THE DETROIT STOVE WORKS, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

STOVE.

No. 843,643. Specification of Letters Patent. Patented Feb. 12, 1907.

Application filed January 16, 1906. Serial No. 296,397.

To all whom it may concern:

Be it known that I, EDWIN G. VAN WIE, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Stoves, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to new and useful improvements in stoves, and consists in the novel construction and arrangement of parts, as will be more fully hereinafter described, and set forth in the claims.

One object of my invention is to produce a stove which can be quickly assembled and in which the whole interior may be easily removed and replaced without the use of bolts or rivets.

In the drawings, Figure 1 is a perspective view with portions broken away to show the construction. Fig. 2 is a plan view of the oven-top. Fig. 3 is a horizontal section through the back lining on lines 3 3, Fig. 1. Fig. 4 is a perspective view of one side and lining. Fig. 5 is a vertical section on lines 5 5 of Fig. 1; and Fig. 6 is a transverse section through the oven, taken on lines 6 6 of Fig. 1.

A is a frame, preferably of cast-iron, of the ordinary type, and on this frame are mounted the sheet-metal outer sides A′ A^2 and a sheet-metal back A^3, preferably integral therewith. In the front of the frame is the upper or oven door opening *a* and the lower or broiler door opening *a′*, which is provided with a suitable oven-door a^2 and a broiler-door, (not shown,) and on the top of the frame, sides, and back is supported a drip-lining or burner-box B and a top B′ of any desired construction, the drip-lining B being of the type usually arranged in gas-ranges below the top burners. The burners are not shown, as they may be of any desired construction and do not form a part of my invention.

C C′ are side linings, preferably formed of sheet metal, having vertical trough-shaped channels *c*, which form passages communicating between the several compartments of the stove, and vertical flanges *c′* on the front and rear edges, extending beyond the bottom of channels *c*. At the top and bottom of channels *c* the metal is bent back to form horizontal flanges c^3. These flanges extend as far as the edges of flanges *c′*, so that on each lining all four edges contact with the side A′, and the bottom flange c^3 rests on the frame, as clearly shown in Fig. 5. The front side of each lining is held in place by lugs c^4 on the frame, and their rear sides are held in position by the complementary sections D D′ of the back lining. These sections are trough-shaped, and the edge of section D has a return bend or hook *d*, engaged by the edge *d′* of section D′. As these sections are formed of sheet-iron, they may be sprung into place and tightly wedged between the side linings.

E is the bottom, preferably of sheet metal, and is supported on flanges *f′* of the rack-plates F. These rack-plates are riveted or bolted to the side linings and are provided with corrugations *f′* for supporting racks for the shelves f^2, and just above the bottom E they are apertured to form air-ports f^3. The bottom E is preferably jacketed by means of a spaced plate E′, secured to its under side.

The back lining-sections are preferably supported on the frame in the same manner as the side linings, but may be supported on the bottom E, if desired.

G is a strap secured to the side lining in the channel *c* as a support for suitable broiler-burner, and F′ is a rack-plate for carrying other shelves above the rack-plate F. These rack-plates preferably bridge the channel *c* and extend to a point adjacent to the back linings.

G′ is a rack-plate above the burner-support G, having at its lower edge a flange *g*, on which rests the side flange *h* of the oven-bottom H. The front flange *h′* of this bottom rests on a flange h^2 on the frame between the oven and broiler door openings, and the rear flange h^3 rests on lugs d^2, struck up from the back lining-sections. The oven-bottom is preferably jacketed by a spaced plate H′.

Apertures d^3 are provided in the sections D D′ slightly above the oven-bottom, and by means of these apertures the sections D D′ may be withdrawn for repair or replacement. These apertures also serve as supplementary outlets for the gases and products of combustion when necessary. All burners are ar-

ranged for a certain pressure, and when a greater pressure is employed the ordinary outlets from the oven are not sufficient.

Another rack-plate G^2 is preferably provided near the top of the oven for shelves g^2; but it is obvious that a greater or less number of rack-plates and shelves may be employed without departing from the scope of my invention.

The sheet-metal oven-top J rests upon the tops of the side and back linings and upon a flange I on the frame above the oven-door opening and the lugs I′ on the back. This top is jacketed by a spaced plate J′, secured to its upper side in flanges along the rear and side edges. The front edge is out of contact with the top, leaving outlet-space for the heated air and gases passing into the jacket through apertures *j* in the rear portion. In the ordinary construction of stoves apertures are placed near the front of the top, and the circulation of air and gases is toward these apertures and toward the crevices around the oven-door, and most of the rear portion of the oven-spaces receives very little heat; but with the construction described most of the air and gases pass toward the rear and must come forward through the jacket, as shown by the arrows in Fig. 6, thus heating substantially the whole oven.

K is a flue opening from the space between the drip-lining and the oven-top and causing the air and gases emerging from the front end of the jacket to pass rearwardly again over the top of said jacket. This flue also extends below the oven-top and registers with an opening K′ in the back A^3 as an outlet for gases passing through the aperture d^3.

The stove may be assembled in the following manner: The frame, with the back and sides, being set up, the burner-box or drip-lining is placed in position and secured in the ordinary manner. The oven-top J is then inserted through one of the doors, its front edge placed on the frame-flange I, and its rear edge is then pushed up until it rests on the lugs I′. The side linings are inserted in the same way and pushed into place with their front edges held by the lugs c^4 on the frame, and the insertion of the back lining-sections holds the rear ends of the side linings securely in position. The oven and broiler bottoms are placed as above described, and the stove is completed by the installation of suitable burners. (Not shown.) With this construction all parts are held firmly in spite of any amount of expansion and contraction due to extreme temperatures, for the reason that the spring of the metal will yield to all strains.

When the flues are cold, there is a certain amount of condensation in different parts of ordinary gas-stoves; but my construction has substantially eliminated this trouble by the even distribution of the heat and by arranging the apertures in the back lining for surplus pressure.

What I claim as my invention is—

1. In a stove, the combination with a frame and sides, back and doors mounted thereon, of side linings and a back lining formed of complementary interlocking channeled sections, for the purpose described.

2. In a stove, the combination with a frame and sides, back and doors mounted thereon, of detachable side linings and a back lining formed of interlocking trough-shaped sections engaging said side linings, for the purpose described.

3. In a stove, the combination with a frame and sides, back and doors carried thereby, of detachable side and back linings, a flange on said frame and lugs on said back lining and a detachable horizontal partition supported by said flange, lugs and side linings, for the purpose described.

4. In a stove, the combination with a frame and sides, back and doors carried thereby, of detachable side linings, flanges thereon spacing said linings from said sides and a back lining wedged between the rear ends of said side linings, for the purpose described.

5. In a stove, the combination with a frame and sides, back and doors secured thereto, of a top supported on said frame and back, side linings supported on said frame, a bottom supported on said side linings, a back lining supported on said frame and a horizontal partition supported on said frame and back lining.

6. In a stove, the combination with a frame and sides, back and doors carried thereby, of a flange on said frame and lugs on said back, an oven-top supported on said flange and lugs and having apertures in its rear end, a drip-lining supported above said top and a baffle-plate secured to said top and extending from a point in the rear of said apertures to a point near the forward end of said top, said baffle-plate being spaced from said lining and top, for the purpose described.

7. The combination with a stove, of vertically-channeled side linings therein, a horizontal member forming two compartments, supports for said horizontal member secured to said linings and bridging the channels whereby said channels form air-passages communicating between said compartments.

8. In a stove, a detachable back lining formed of complementary interlocking trough-shaped sections provided with the apertures d^3, for the purpose described.

9. In a stove, the combination with a frame and sides, back, and doors carried thereby, of side linings, back linings formed

of complementary sections and horizontal members, all supported on said side and back linings and arranged to be inserted and withdrawn through one of said door-openings, for the purpose described.

10. In a stove, an oven, an outlet therefor and a false back for the oven having apertures forming supplementary outlets for said oven, for the purpose described.

11. In a gas-stove oven, an oven-top having flue-apertures near its rear end and a baffle-plate spaced from the upper side of said top to lead forward the products of combustion, for the purpose described.

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

EDWIN G. VAN WIE.

Witnesses:

W. G. SEELY, Jr.,

N. MCLEOD.