No. 705,928. Patented July 29, 1902.

W. HEUERMANN.

STOVE.

(Application filed Mar. 4, 1902.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

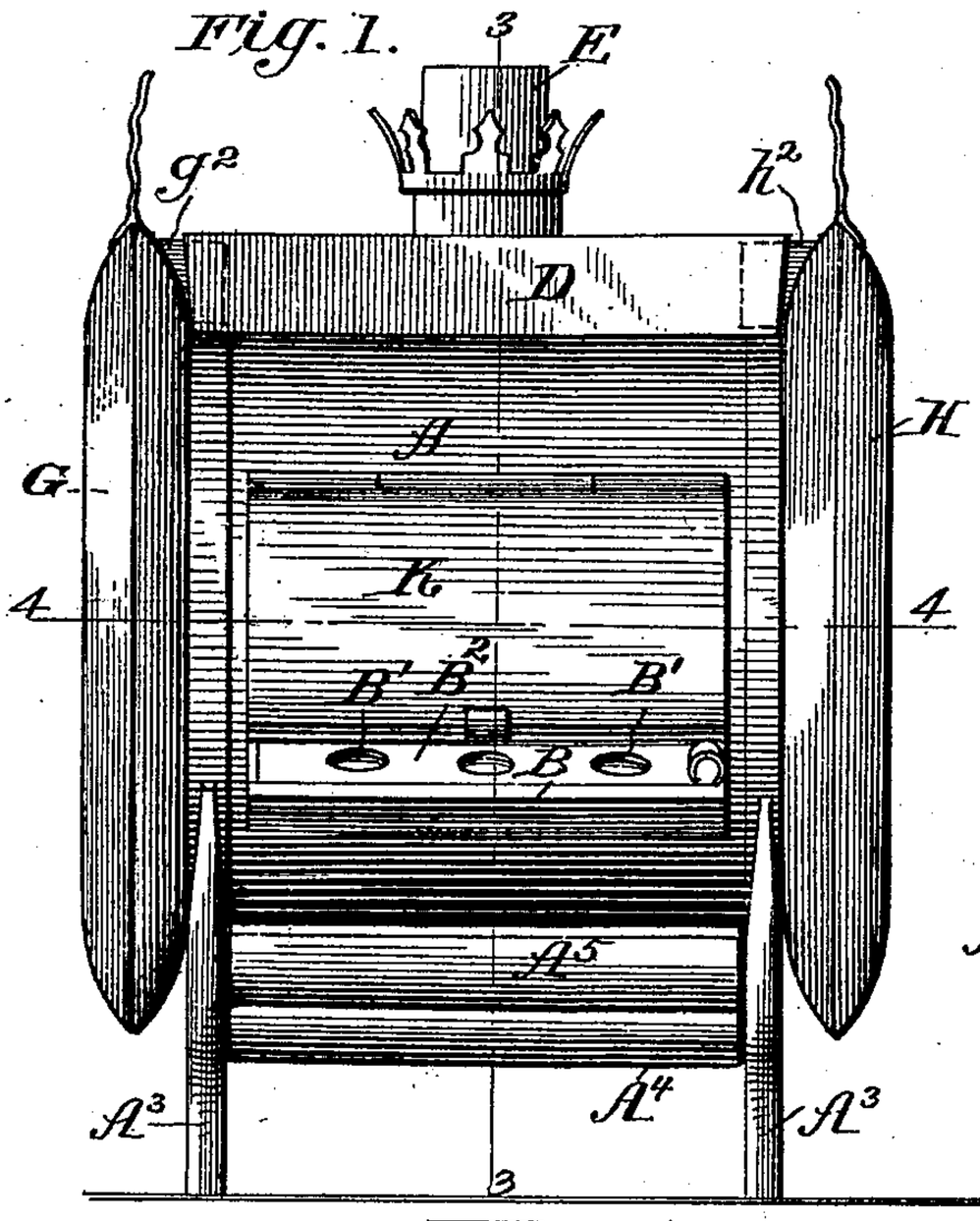


Fig. 2.

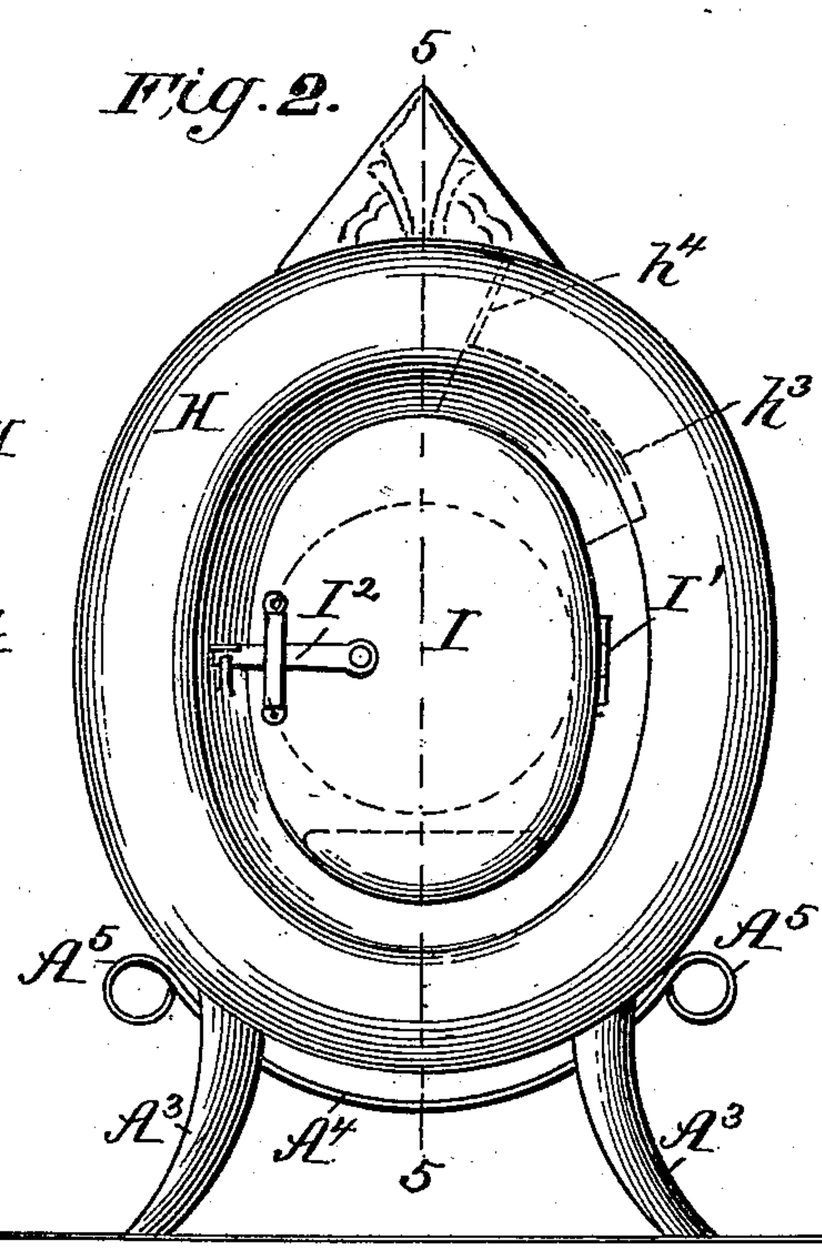


Fig. 3.

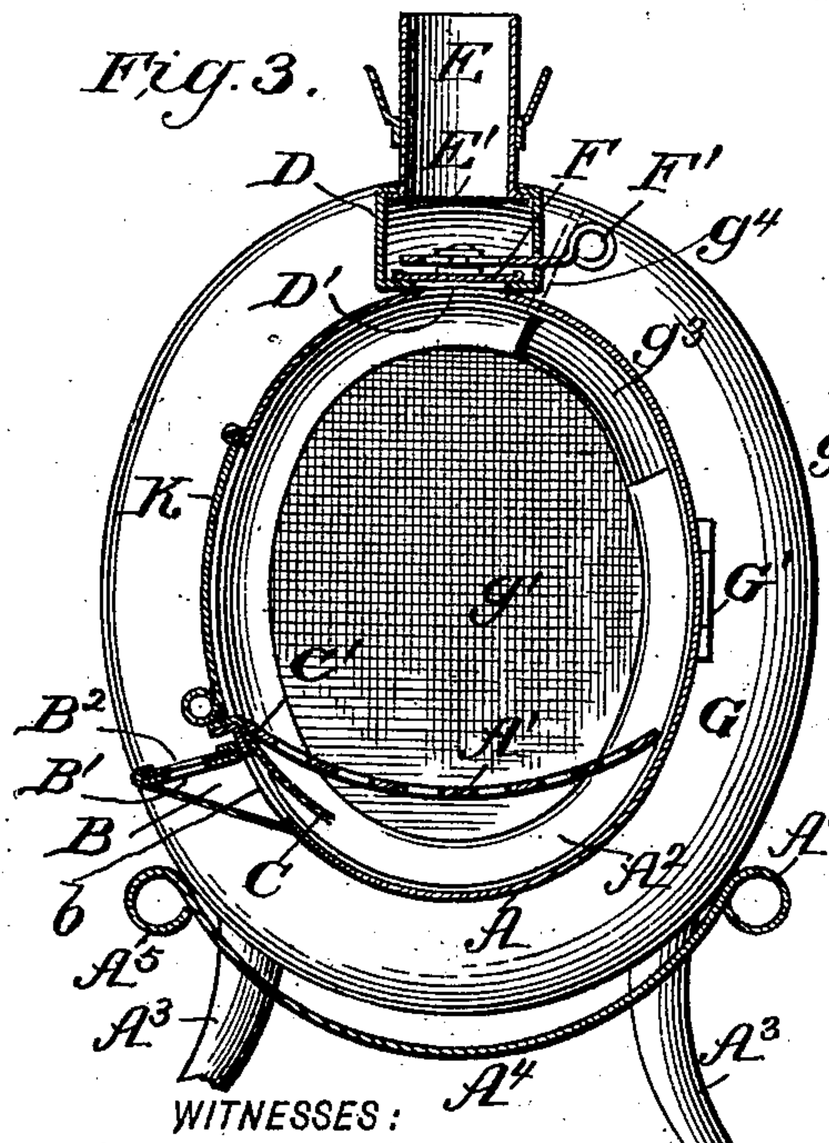
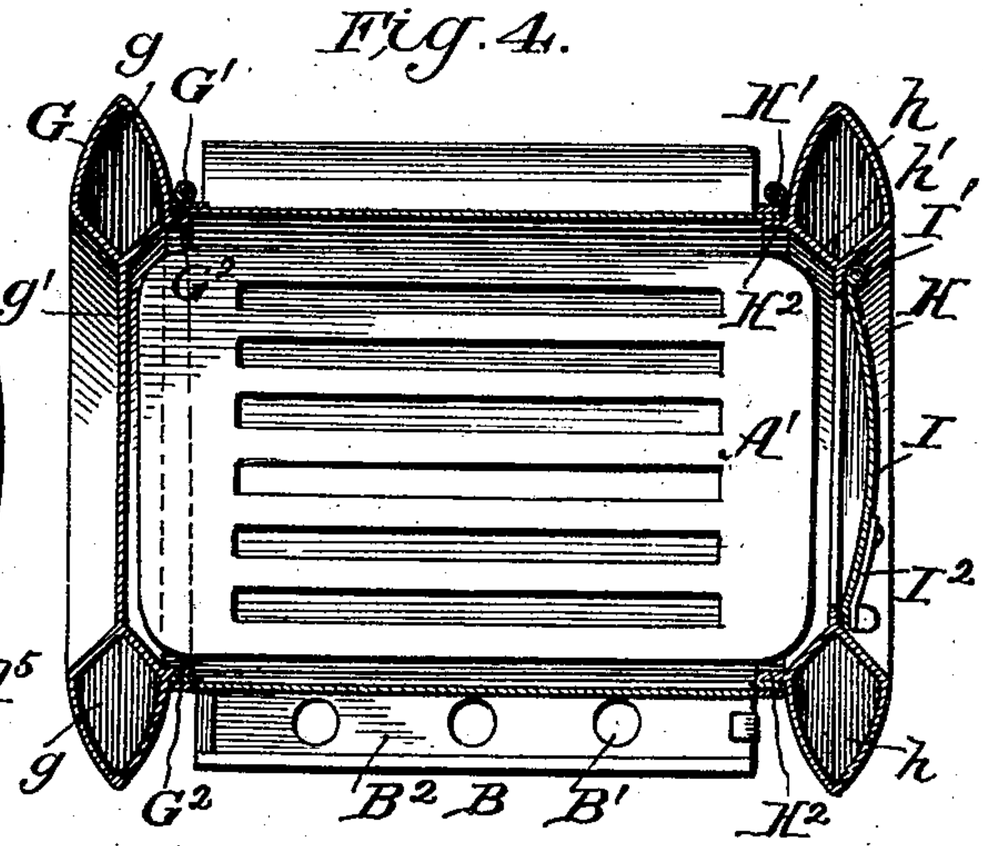


Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

Fig. 5.

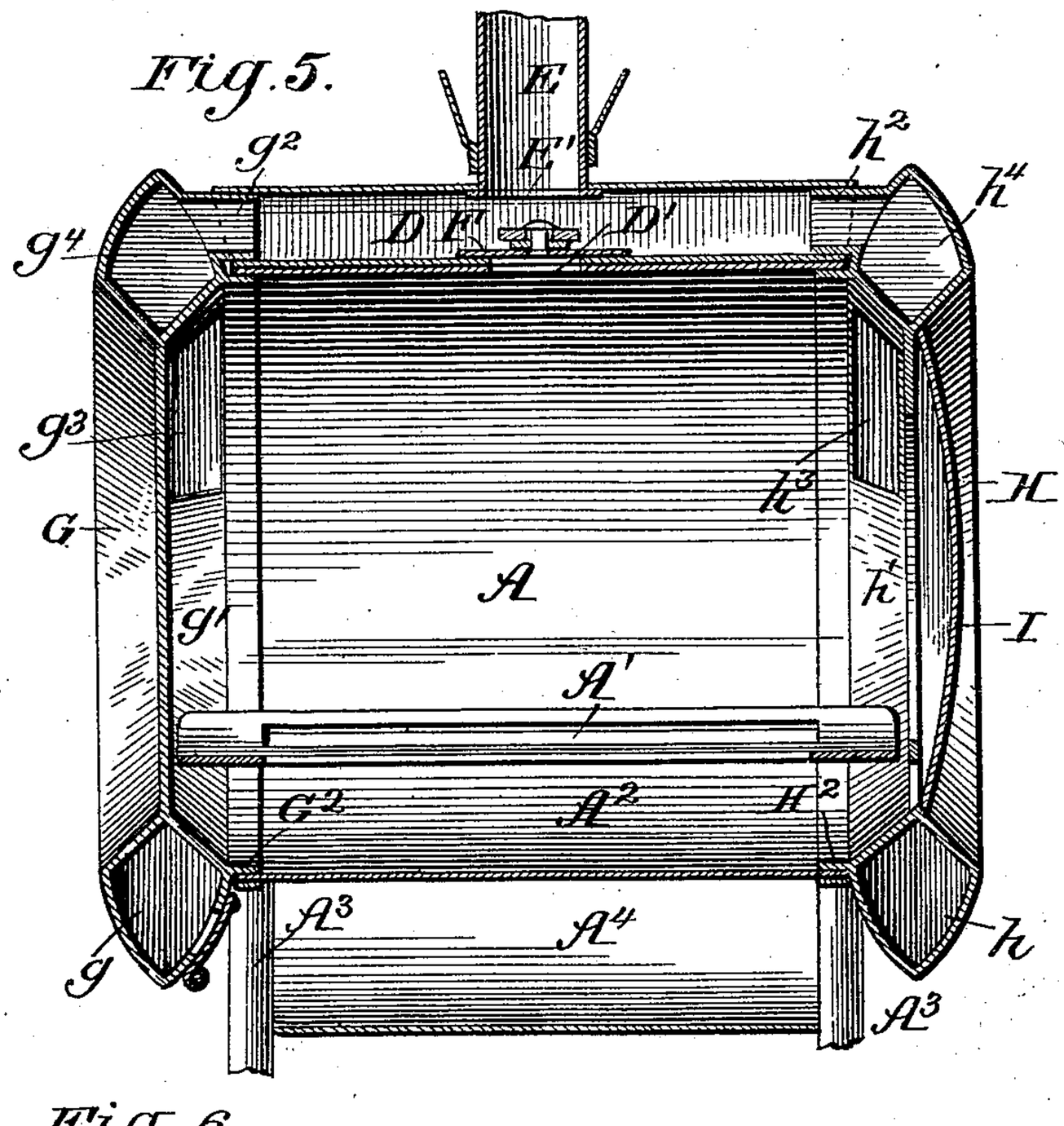


Fig. 6.

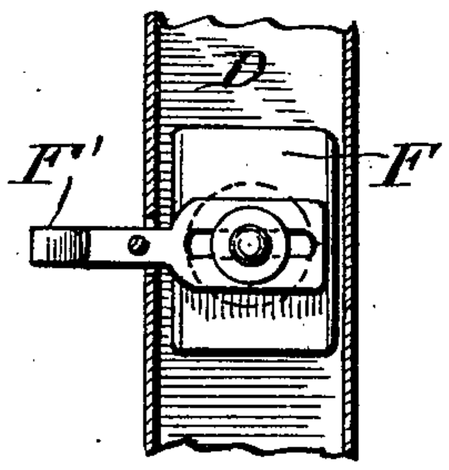
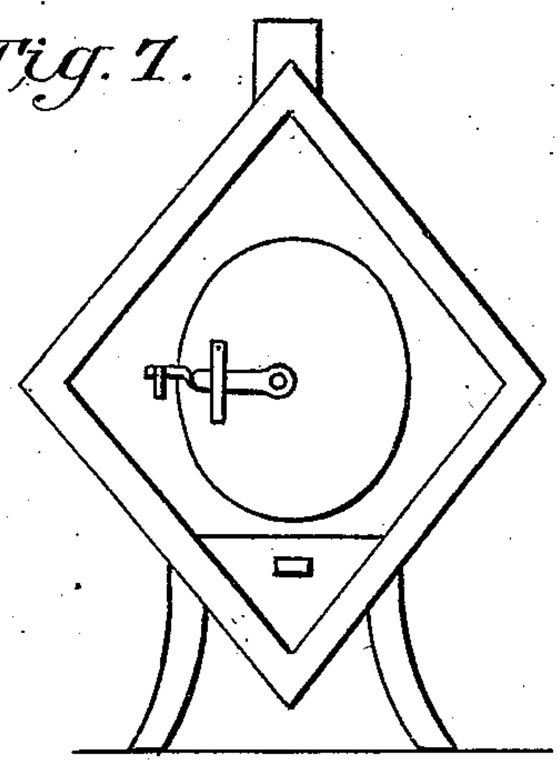


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM HEUERMANN, OF SEDALIA, MISSOURI.

STOVE.

SPECIFICATION forming part of Letters Patent No. 705,928, dated July 29, 1902.

Application filed March 4, 1902. Serial No. 96,586. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HEUERMANN, a citizen of the United States, residing at Sedalia, in the county of Pettis and State of Missouri, have made certain new and useful Improvements in Stoves, of which the following is a specification.

My invention is an improvement in stoves, and relates particularly to the means for forcing the circulation of the products of combustion in order to secure the maximum heating results therefrom; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a side view, and Fig. 2 an end view, of my stove. Fig. 3 is a cross-sectional view on about line 3 3 of Fig. 1. Fig. 4 is a horizontal section on about line 4 4 of Fig. 1. Fig. 5 is a vertical longitudinal section on about line 5 5 of Fig. 2. Fig. 6 is a detail sectional view illustrating the valve controlling the direct communication between the combustion-chamber and the offtake; and Fig. 7 illustrates a somewhat different construction, as will be described.

My stove, as shown, includes the combustion-chamber or fire-box A, in which is supported the grate A′, arranged to form the ash-box A^2 and mounted upon the legs A^3, to which is secured the shield-plate A^4, whose ends are bent at A^5 to form foot-rests or for other desired purposes. A lateral extension B of the ash-box forms a draft-chamber, having inlet-openings B′, controlled by the damper B^2, which may be adjusted longitudinally to regulate or shut off the passage of air to the ash-box and thence to the combustion-chamber. A plate C is secured at its upper end C′ and extends thence into the ash-box over and slightly spaced apart from the opening *b*, which leads into the draft-chamber and tends to prevent any ashes from dropping into the draft-chamber when the stove is in use. A flue D extends longitudinally along the top of the combustion-chamber and communicates therewith through a central opening D′ and also by an opening E′ with the offtake E, the openings D′ and E′ being preferably in alinement, as will be understood from Figs. 3 and 5. A valve F, having a handle F′, controls the opening D′ and may be adjusted, as shown in Fig. 6, to close said opening, and thus prevent the products of combustion from passing from the chamber A directly to the offtake.

At the opposite ends of the combustion-chamber A I provide the drum-sections G and H which are hinged at G′ and H′ to the body of the stove, are provided with flanges G^2 and H^2 which fit within the stove-body when the sections G and H are adjusted for use, and the section H is provided with a door I hinged at I′ and latched at I^2 and through which access may be had to the interior of the combustion-chamber for any desired purpose. These sections G and H are provided with flues *g* and *h*, which extend around the edges of the sections and practically encircle the combustion-chamber at the ends thereof, such flues at their inner sides at *g*′ and *h*′ being exposed to the action of the fire within the combustion-chamber, and nipples g^2 and h^2 connecting the flues G and H with the opposite ends of the top flue D, as shown in Fig. 5. At their inner sides near their upper ends the sections G and H are provided with openings g^3 and h^3, through which communication is established with the interior of the stove, so the products of combustion pass through the openings g^3 and h^3 into the flues *g* and *h* and will be caused to circulate around through said flues by means of stop-plates g^4 and h^4, which prevent the passage of the products through the openings g^3 and h^3 directly to the nipples g^2 and h^2. Thus in operation if the valve F be closed the products of combustion will be caused to pass through the openings g^3 and h^3 into the end flues and circulate around through said flues and discharge through the nipples g^2 and h^2 into the ends of the top flue and pass thence out through the offtake.

As shown in Figs. 1, 3, and 4, the combustion-chamber has a side door K, arranged immediately above the draft-chamber B, which may be opened for any desired purpose.

It will be noticed from Figs. 2 and 3 that the end flues are made oval with the major axis vertical and parallel with the corresponding axis of the oval combustion-chamber; but manifestly such flues and chamber may be made round in cross-section or may be made diamond shape, as will be under-

stood from Fig. 7, which shows a diamond-shape arrangement of the end flues. The end-flue sections may preferably be hinged, as shown, to facilitate access to the stove and to the interior of the flues through the openings g^3 and h^3; but it will be understood that where desired they might be made fast with the combustion-chamber and to operate as before described.

While I refer to the flue D as the "top" flue it will be understood that it need not be arranged at the extreme upper side of the combustion-chamber, but may, if desired, be located down alongside of such chamber, it being understood that this so-called "top" flue receives the double-acting heat which is drawn through both encircling end flues, as before described.

Any suitable fuel may be used in the stove.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The improvement in stoves herein described, comprising the combustion-chamber or fire-box having an outlet-opening in its top, a top flue communicating with said opening and extending from end to end of the combustion-chamber, the offtake connected with said flue, the grate within the combustion-chamber, the draft-box below said grate and lateral to the combustion-chamber, the damper controlling said draft-box, the plate within the ash-box and overlying the opening between the draft-box and the ash-box, and the end sections having encircling flues provided with stop-plates and on one side of said stop-plates with nipples arranged to enter the opposite ends of the top flue and on the other side of said stop-plates with openings leading into the combustion-chamber, all substantially as and for the purposes set forth.

2. The combination in a stove with the combustion-chamber and the top flue extending along the same and provided with an opening communicating with the combustion-chamber and with a valve controlling said opening, of the sections at the ends of the combustion-chamber and provided with encircling flues each having a stop-plate and communicating on one side thereof with the end of the top flue and on the other side of said stop-plate with the interior of the combustion-chamber, substantially as and for the purpose set forth.

3. The combination in a stove with a combustion-chamber and a top flue, of the end sections hinged to the combustion-chamber and having encircling flues and nipples connecting the same with the opposite ends of the top flue, and having stop-plates and openings in the end flues, whereby the products of combustion from the combustion-chamber may be caused to circulate through the end flues and thence into the top flue and an offtake connected with the top flue, substantially as set forth.

4. The combination with the combustion-chamber, and a flue extending along the top thereof, and communicating at its middle with the combustion-chamber and having at its middle an offtake, of a valve controlling the communication between the top flue and the combustion-chamber, and the end sections having encircling flues arranged to receive the products of combustion from the combustion-chamber and to discharge such products to the opposite ends of the top flue, substantially as set forth.

5. The combination with the combustion-chamber, of flues encircling the opposite ends of the combustion-chamber and having openings through which to receive the products of combustion from the combustion-chamber, and an offtake in connection with said flues, substantially as set forth.

6. The combination of the combustion-chamber, the end sections having flues encircling the opposite ends of the combustion-chamber, a top flue in communication at its opposite ends with the opposite end flues, a door in one of the end sections, and a valve controlling direct communication between the top flue and the combustion-chamber, substantially as set forth.

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Witnesses:
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A. P. MOREY.