



(No Model.)

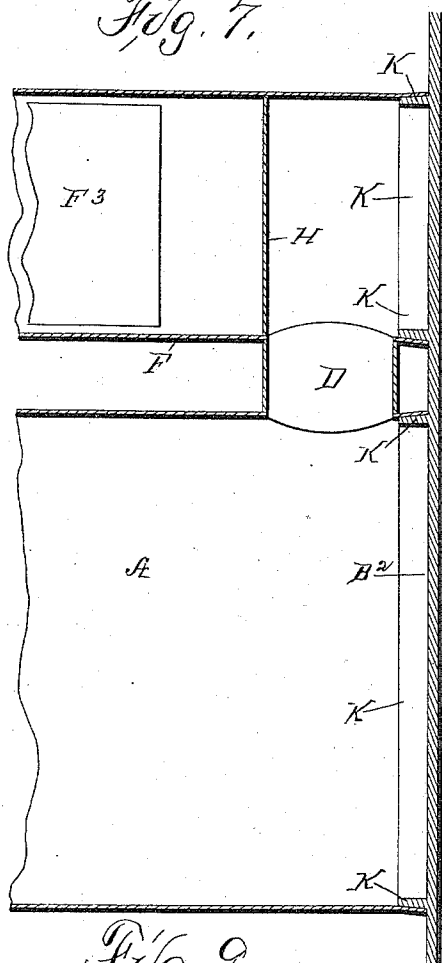
2 Sheets—Sheet 2.

F. L. BEYMER.  
SHEET METAL HEATING STOVE.

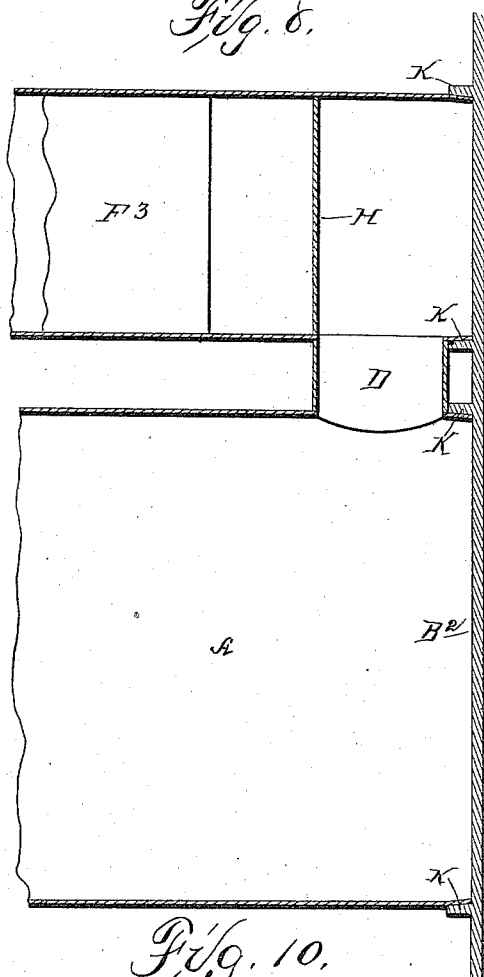
No. 579,379.

Patented Mar. 23, 1897.

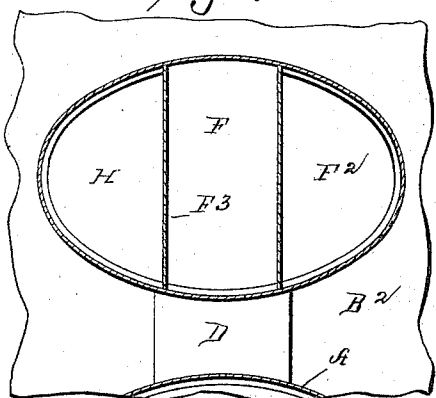
*Fig. 7.*



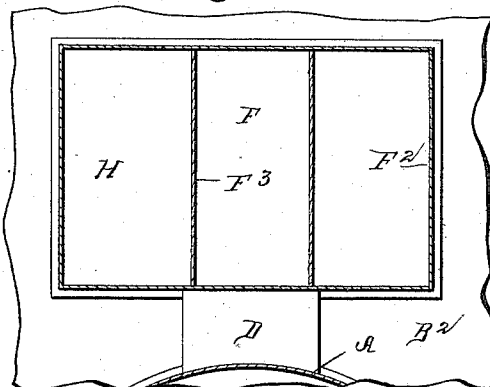
*Fig. 8.*



*Fig. 9.*



*Fig. 10.*



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# UNITED STATES PATENT OFFICE.

FRED L. BEYMER, OF INDIANOLA, IOWA.

## SHEET-METAL HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 579,379, dated March 23, 1897.

Application filed February 4, 1896. Serial No. 578,067. (No model.)

*To all whom it may concern:*

Be it known that I, FRED L. BEYMER, a citizen of the United States of America, residing at Indianola, in the county of Warren and State of Iowa, have invented certain new and useful Improvements in Sheet-Metal Heating-Stoves, of which the following is a specification.

My invention relates to that class of sheet-metal stoves in which the fire-box is inclosed in a sheet-metal casing; and my objects are, first, to provide a radiating-drum of simple, cheap, strong, and durable construction designed to receive the products of combustion arising from the stove and utilize it to its maximum capacity in heating, and either a direct or indirect draft be provided.

A further object is to provide a stove-front having flanges to receive said stove body and casing, with draft-passages cast integral therewith and extending between the said flanges, so as to be exposed to the greatest possible degree of heat and yet not be liable to burn out by direct exposure to the fire.

My invention consists in certain details of construction, arrangement, and combination of parts whereby the results contemplated are attained, as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows the complete stove in side elevation. Fig. 2 shows a vertical section on the line 2 2 of Fig. 1, also showing one of the air-feeding pipes in section. Fig. 3 shows a vertical section on line 3 3 of Fig. 1. Fig. 4 shows a vertical longitudinal section on line 4 4 of Fig. 2. Fig. 5 shows a horizontal section through the radiating-drum and an arrow indicating the usual line of draft there-through. Fig. 6 shows a like view, in which the direct draft is indicated by dotted lines and the most circuitous draft by an arrow. Fig. 7 shows a detail sectional view of the rear end of the stove to show the connection of the stove body and drum with the rear upright. Fig. 8 is a like view showing a modified form. Fig. 9 shows a transverse section of a modified form of drum, and Fig. 10 shows a like view of another modification.

Referring to the accompanying drawings,

the reference-letter A is used to indicate a cylindrical sheet-metal fire-box supported in the cast-metal ends B and B<sup>2</sup>, which have the integral feet B<sup>3</sup>.

C indicates an oval sheet-metal stove-body which I have provided with a perforated bottom at C<sup>2</sup> and a screen C<sup>3</sup> at its top to permit a free circulation of air therethrough.

I have provided means for admitting heated air to the fire-box to aid in producing complete combustion by casting upon or attaching to the rear surface of the front B two air-passages C<sup>4</sup>, having their upper ends open at the front and their lower ends leading into the fire-box at opposite sides, the passages being brought into close proximity to the combustion-chamber, so as to heat the air as it passes therethrough.

D indicates a smoke-pipe communicating with the rear top portion of the fire-box and leading to a radiating-drum.

The means I have provided for increasing the radiating-surface and providing for a direct or a tortuous passage for the smoke comprises a radiating-drum F, semicircular in transverse section, open at its ends, and having two longitudinal vertical partitions F<sup>2</sup> and F<sup>3</sup>, extended to points near the ends of the drum, the partition F<sup>3</sup> being shorter at its rear end than the other one, for purposes hereinafter made clear. A partition F<sup>4</sup> extends from the rear end of the partition F<sup>2</sup> to the side of the drum farthest from the partition F<sup>2</sup>, and dampers are provided at H and H<sup>2</sup>, so that the draft may be directed in either of the three ways indicated in Figs. 5 and 6. The arrangement of the dampers necessary to accomplish this will be readily understood by reference to said figures.

The flue-pipe J leads upwardly from the central portion of the flue on the left-hand side of the drum.

K indicates a clean-out and check-draft door in the front B to communicate with the drum.

In Figs. 7 and 8 two means for connecting the stove body and drum with the end pieces are shown. In each instance, however, the flanges K<sup>2</sup> are beveled on their upper or under surfaces, and by forcing the body or drum

up to the end the edges of said body or drum are expanded and a tight connection thereby provided.

5 In Fig. 9 a radiating-drum, oval in transverse section, is provided in lieu of the semi-circular or the preferred form, and in Fig. 10 a rectangular drum is illustrated. In each instance, however, the operation is the same, and the same beneficial results are attained.

10 Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent of the United States therefor, is—

15 1. In a sheet-metal stove having a suitable fire-box, and upright end pieces for supporting the same, the combination of an open-ended drum, designed to be supported in the said end pieces above the stove-body, and having an opening at its bottom near one end  
20 to admit a pipe from the fire-box and a discharge-opening at its top, two longitudinal partitions therein extending to points near the ends of the drum, a transverse partition extending from the end of one of said partitions to the opposite side of the drum and  
25 having a draft-passage therein to provide open draft-passages from the opening that leads to the fire-box direct to the discharge-opening and from the flue-opening through the middle passage and partly through the  
30 remaining outer passage to the discharge-opening and dampers to control the direct

passage and to control the passage leading around the interior to the flue-opening, substantially as set forth. 35

2. A sheet-metal stove comprising two oval cast-metal end pieces, an oval sheet-metal body fixed to said end pieces, a cylindrical sheet-metal fire-box located in the lower portion of said oval metal body and fixed to said end pieces, a radiator having a tortuous passage for the products of combustion inclosed within the oval metal body and above the fire-box and means for conducting and controlling the passage of the products of combustion from the fire-box through the radiator in the manner set forth, for the purposes stated. 40 45

3. The combination in a sheet-metal stove, of a cast-metal front having an inwardly-projecting flange, a sheet-metal stove-body with its end overlapping the flange, two flues cast integral with the stove-front and leading from a point near the top of the stove, downwardly on the rear surface of the stove-body in close proximity thereto but not in direct contact with the fire at any point, and discharging into the stove-body at its bottom, to produce a downdraft-flue that will superheat air and yet not burn out, substantially as set forth. 50 55

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