No. 649,298. Patented May 8, 1900.

H. A. GUIGNON.

GAS STOVE.

(Application filed Dec. 15, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

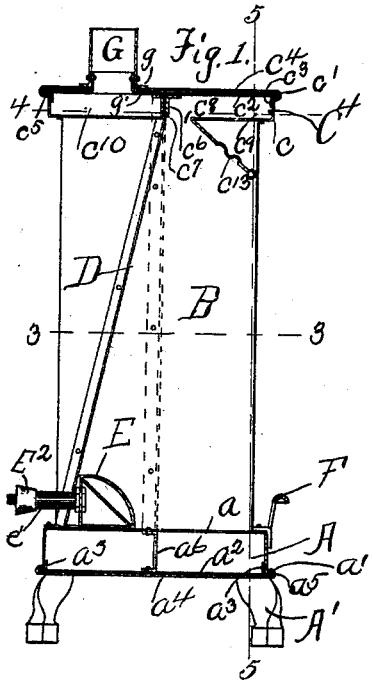


Fig. 2.

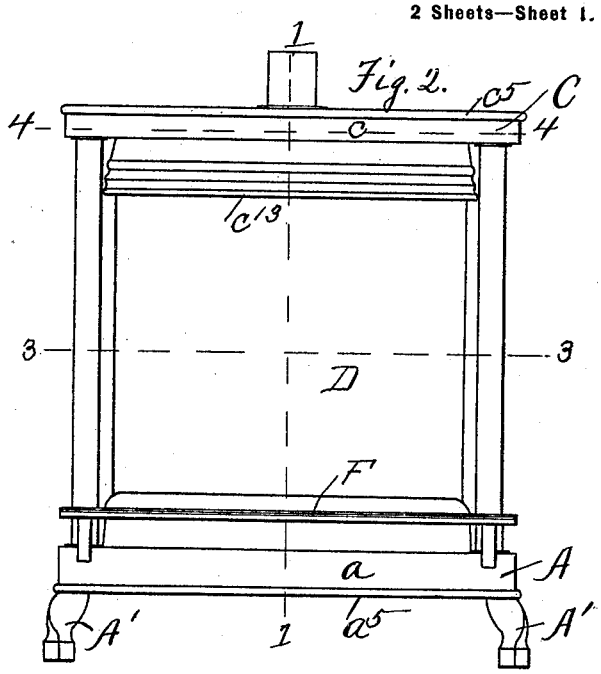
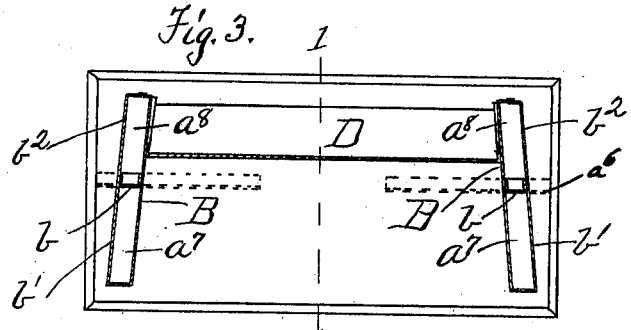


Fig. 3.



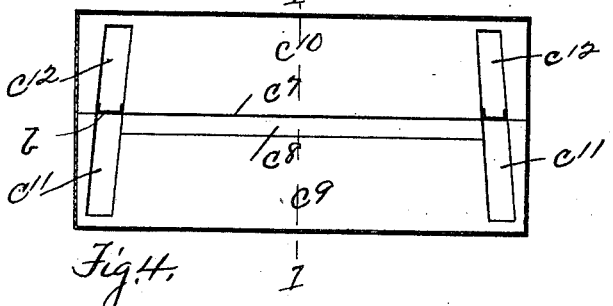


Fig. 4.

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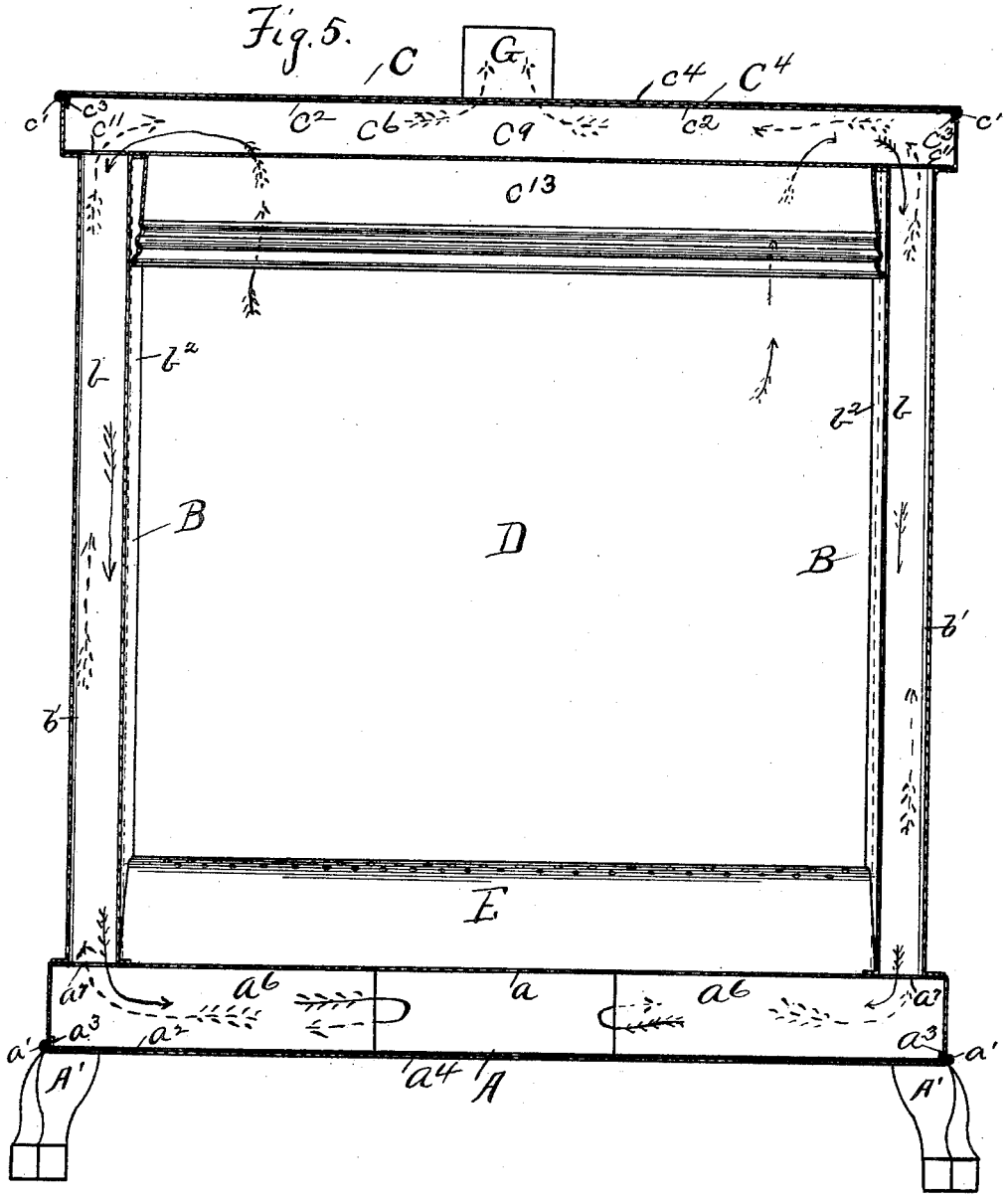
(No Model.) 2 Sheets—Sheet 2.

Fig. 5.



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GAS-STOVE.

SPECIFICATION forming part of Letters Patent No. 649,298, dated May 8, 1900.

Application filed December 15, 1898. Serial No. 699,307. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. GUIGNON, a citizen of the United States, residing at Corry, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Gas-Stoves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to gas-stoves; and it consists in certain improvements in the construction thereof, as will be hereinafter fully described, and pointed out in the claims.

More particularly, the invention relates to stoves having an open front, with a fireback and a flue or flues for deflecting the heated gases from a direct entrance to the exit pipe or flue in such a manner as to communicate the greatest possible portion of the heat in said gases to the surrounding air without so obstructing the passage of said gases as to cause their escape to the air.

The invention is illustrated in the accompanying drawings, as follows:

Figure 1 shows a section on the lines 1 1 in Figs. 2, 3, and 4. Fig. 2 shows a front elevation of the stove. Fig. 3 shows a section on the line 3 3 in Figs. 1 and 2. Fig. 4 shows a section on the lines 4 4 in Figs. 1 and 2. Fig. 5 is a vertical section on a line extending through the opening c^8 in Figs. 1 and 4.

The stove comprises the following general parts: a base A, side flues B, top C, fireback D, and a burner E.

The stove is preferably formed by connecting the top with the base through the medium of flues B, leaving an opening from front to rear through the stove, in which the fireback D and burner E are inserted. The burner E is arranged in proper relation to throw its flame on the fireback D, which is preferably provided with material adapted to become incandescent by the action of the flame upon it. The base as constructed comprises an upper portion a, struck up from sheet metal with the sides extending downwardly, said sides having a flange a', which extends around the outer periphery of the base. A plate a^2, with flanges a^3, which are arranged within the side of the part A, forms a false bottom. Partitions a^6 are secured to this false bottom and to the top part a and extend inwardly from the side edges to the points near the center of said base, leaving a space between their inner ends, as shown in dotted lines in Fig. 3. A bottom plate a^4 is placed under the false bottom and has its edges a^5 crimped over the flange a', thus securing the whole structure together. Legs A′ may be secured to this base and also a fender F, if desired. Flue-pieces B are preferably arranged at each side of the burner and open into the base through the openings a^7 a^8. A partition b divides these flue-pieces into two flues b' and b^2, which open through the openings a^7 a^8 to the front and rear portions of the base, respectively. The top C is preferably formed of sheet metal struck up with its sides extending upwardly, said sides having a flange c', extending around the upper edges. An opening c^8 is arranged in said top, preferably just in front of the top of the fireback D. An inflector c^{13} extends downwardly and in front of said opening. A false top c^2 is provided with flanges c^3, which fit in said sides of the parts c. Partition-plates c^6 are riveted or secured to this false plate and embrace an upturned portion c^7 from the bottom of the parts c, thus forming the partition entirely across the center of the top. A top piece c^4 is crimped at c^5 over the flanges c', thus uniting and closing the top. Openings c^{11} and c^{12} through the bottom of the parts c open into the flues b' and b^2, respectively, the partitions formed by the plates c^6 and c^7 registering with the partitions b and forming front and rear chambers c^9 and c^{10}. An exit flue or pipe G is arranged in the top of the rear chamber of the top portion C. The pipe has a flange g at its lower edge, which rests upon the plate c^4. A piece g' is secured within the pipe and extends into the interior top, where it is flanged outwardly to secure the pipe in place.

In operation the heated gases pass up into the front portion of the top, down the flues b', around the partitions a^6, up the flues b^2, through the rear portion of the top to the exit-flue G. This does not so retard the gases as to expel some of them into the room or chamber in which the stove is used, but at the same time does so hold the gases as to allow the heat to dissipate largely into the surrounding air without choking the exit-flue

G. It is common practice with stoves of this character to allow the heat of the gases to pass directly into the exit-flue G, but to provide the exit-flue G with a damper, which reduces the passage to so small a size as to expel more or less of the products of combustion. In the use of natural gas this is particularly bad, because the products of combustion contain a great deal of moisture, which is condensed upon any cool surface, especially windows. With a stove of the character herein described all the qualities of the open front are given to the stove without this effect. The arrangement of the flues b' at the side and in advance of the burner so locates it as to be away from a wall or woodwork which may be immediately at the rear of the stove, and while the gases have their greatest heat they are in this manner held the farthest remote from the part of the stove which is usually placed in proximity to the wall. By making the flues at the side and leaving the center open the fireback and burner may be readily put in place and removed and repaired without disturbing other portions of the stove.

The burner is formed, preferably, by bending sheet metal substantially into the form shown, with perforations e along the top. A perforated plate E' is placed diagonally across the burner between the jet-orifices e and the feed-pipe e'. This so diffuses the gases as to effect an even flame throughout the length of the burner. A mixer E^2 is arranged on the feed-pipe, as commonly.

What I claim as new is—

1. In a gas-stove the combination of a fireback arranged to be directly exposed at the front; a burner arranged to throw its flame upon said fireback; a flue at the side of said fireback forming a part of the combustion-chamber being connected at its top with an opening leading from the fireback, and at the bottom with the stove-exit.

2. In a gas-stove, the combination of a fireback arranged to be directly exposed at the front; a burner arranged to throw its flame upon said fireback; a flue at the side of said fireback forming a part of the combustion-chamber, said flue being connected at its top with an opening leading from said fireback; and a second flue leading from the bottom of the first flue and being also placed at the side of the stove, said flue being connected at its top with the exit.

3. In a gas-stove, the combination of a fireback arranged to be directly exposed at the front; a flue at the side of the fireback forming a part of the combustion-chamber, said flue being connected at its top with an opening leading from said fireback; a bottom flue leading from said first flue along the bottom of the stove toward the center of the stove and back to the same side of the stove as the first flue; and a second flue arranged at the side of the stove being connected at the bottom with said bottom flue and at the top with the exit.

4. A gas-stove having an air-flue at its side forming a part of the combustion-chamber; a burner in the rear of said combustion-chamber; a fireback in said stove, the stove being open from front to rear whereby access can be had to the burner and fireback from the rear.

5. A gas-stove having air-flues at its sides forming a part of the combustion-chamber; a burner in the rear of said combustion-chamber; a removable fireback in said stove, the stove being open from front to rear whereby the fireback may be removed and access may be had to the burner from the rear.

6. In a gas-stove, the combination of the base having the partition, a^6; a fireback arranged to be directly exposed at the front; a burner arranged to throw its flame upon said fireback; the side flues, b' b^2; the inner walls of one of said flues forming the side wall for the fireback the top having a partition dividing it into a front and rear portion, the front portion being in connection with the flue, b', and the rear portion with the flue, b^2; and an exit-pipe from the rear compartment of the top.

7. In a gas-stove base, the combination of the top part, a, having the flange, a'; a false bottom, a^2; the bottom, a^4, crimped on the flange, a'; and the partition, a^6.

8. In a gas-stove top, the combination of the bottom piece, c, having the flanges, c'; the false top, c^2, having the flanges, c^3; the plates, c^6 c^7, forming the central partition at the top; and the top, c^4, having the crimped edge, c^5.

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

HENRY A. GUIGNON.

Witnesses:
H. C. LORD,
M. BURY.