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H. A. AHRENS ET AL.
STOVE CONSTRUCTION.
FILED JAN. 23, 1922.

Fig. 1.

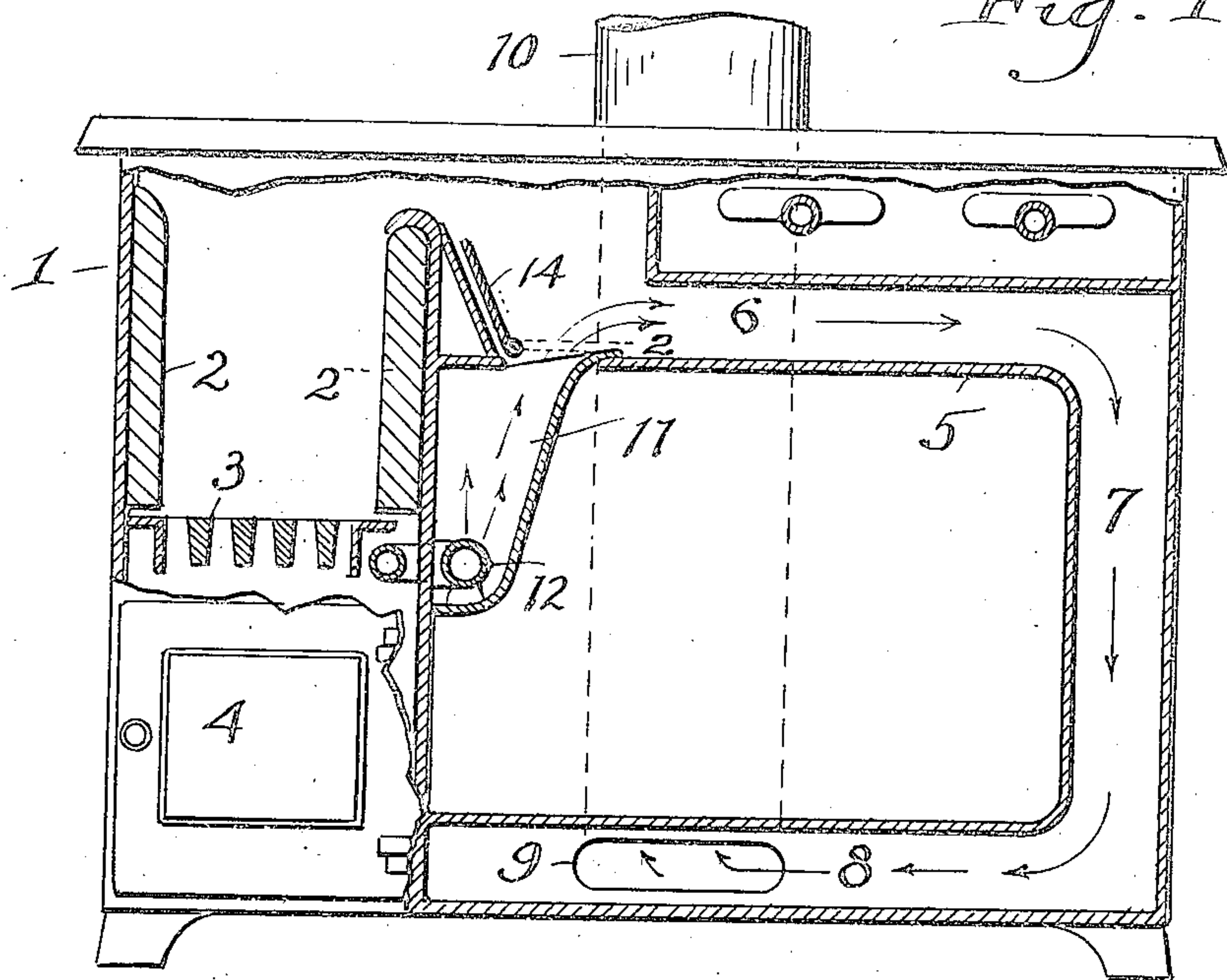


Fig. 2.

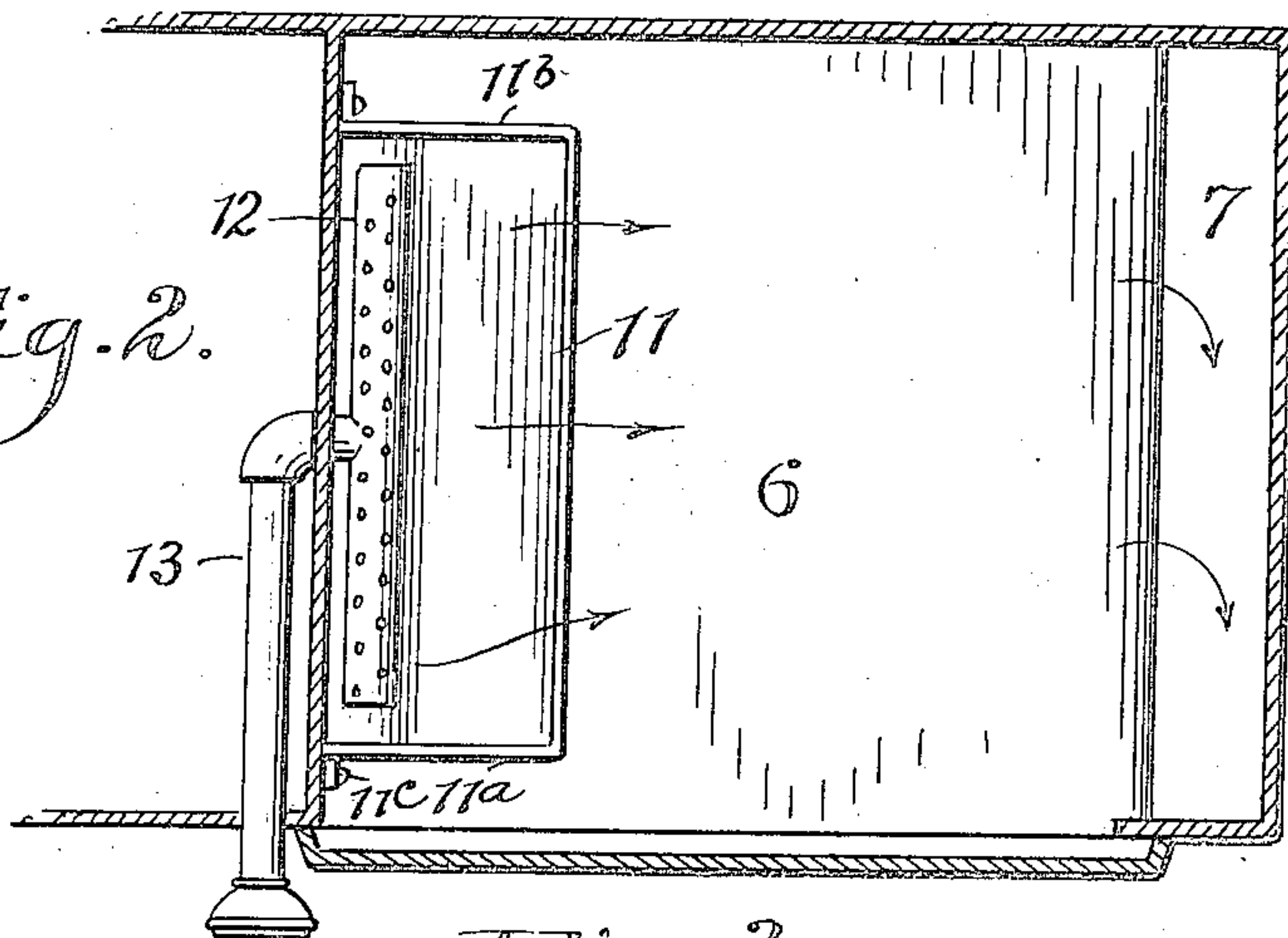
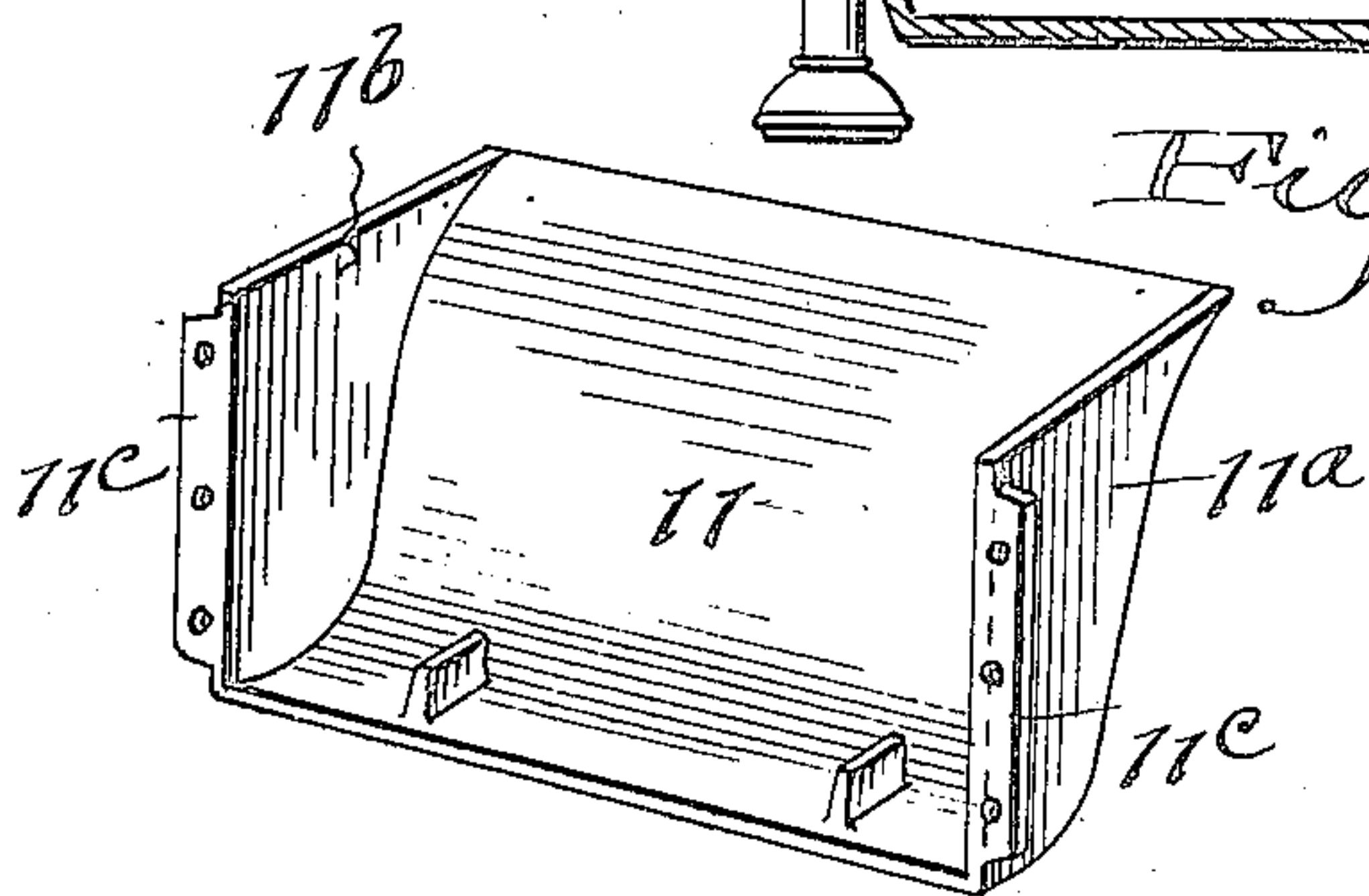


Fig. 3.



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UNITED STATES PATENT OFFICE.

HENRY A. AHRENS AND HARVEY B. HITESHEW, OF CLEVELAND, OHIO.

STOVE CONSTRUCTION.

Application filed January 23, 1922. Serial No. 531,077.

To all whom it may concern:

Be it known that we, HENRY A. AHRENS and HARVEY B. HITESHEW, citizens of the United States, and residents, respectively, of Cleveland, in the county of Cuyahoga and State of Ohio, and Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Stove Constructions, of which the following is a full, clear, and exact description.

The present invention relates to a construction for a stove or range combining in the stove or range a construction whereby solid fuel may be used or a gas burner may be used, particularly for heating the oven.

Referring to the drawings forming a part of this specification, Fig. 1 is an elevation with portions in section of a stove or range embodying the present invention; Fig. 2 is a top plan view of a portion of the range with portions in section; Fig. 3 is a perspective view of a feature of construction.

Referring to the drawings, the body of the range is represented at 1, and is provided with the usual fire box 2, grates 3, and ash pit, which is behind the ash pit door 4. The oven, which is enclosed within a hollow casing 5, is of usual construction, and while not shown in the drawings, it will be understood that the front of the stove employs a usual oven door.

Above the oven and communicating with the fire box is a top flue passage 6, a side flue passage 7, and a bottom flue passage 8, which bottom flue passage at the rear of the stove communicates with an exit 9 which in turn communicates with a smoke or flue pipe 10.

All of the foregoing construction is more or less common in present types of stoves and ranges, which are heated by solid fuel.

In order to adapt such a stove or range as described to the use of gas as a fuel, particularly for heating the oven, we introduce at one end of the oven, and specifically that end of the oven which is adjacent to the usual fire box, an auxiliary enclosing member 11 which is in detail shown in Fig. 3. This member 11 has what may be termed a front portion which is curved and is provided with two, preferably integral, end members 11^a and 11^b, both of these end members along one edge being provided with out-turned flanges 11^c.

The member 11 may be described as in-

troduced through a suitable opening in the top wall of the oven 5, and the arrangement is such that the upper end or lip of the member 11 slightly overlaps the edge of the cut out portion of the top of the oven 5.

The lower inner edge and the flange members 11^c engage with and are secured in any suitable manner to the wall which forms the end portion of the oven 5. This construction results in providing a chamber which is entirely sealed from the oven 5, and which chamber at its upper end communicates with the top flue 6 which is above the oven. Within the chamber provided with the member 11 is a gas burner 12 which is preferably made of such a length as to extend approximately throughout the length of the member 11, and this burner communicates with a pipe 13 extending through the side wall member adjacent the burner, and through the front of the stove, where suitable pipe and valve connections are provided as is usual practice in the art.

For the purpose of preventing the accumulation of soot or particles of ashes within the chamber provided with the member 11 when the same is not in use, a damper plate 14 is pivotally mounted adjacent the upper end of the member 11, so that it may be turned into a horizontal position, as shown in dotted lines in Fig. 1, thereby closing the top opening of the member 11, or on the other hand, when the gas burner is to be used, the plate 14 is to be turned back, as represented in full lines in Fig. 1, to prevent the passage of the products of combustion from the burner 12 to the flue 6. A suitable rod may be connected with the damper 14 for the purpose of operating the damper.

As before noted, it will be seen that when the burner 12 is in use, the flame will impinge against the upper portion of the curved wall of the member 11 so that heat will be radiated from this member into the oven 5. Additionally, the products of combustion from the burner will pass through the flue 6 and so in contact with the top wall of the oven, thus imparting the greatest heat to the top wall of the oven and causing the heat within the oven to be applied from the top down. After the products of combustion pass through the flue 6 they successively pass through the flues 7 and 8 and out through the flue pipe 10. During the passage of the gases through the flues 7 and 8

they of course impart heat to the walls of the oven, but the greatest amount of heat from the flue gases is applied at the top of the oven.

5 Additionally, by placing the burner in the particular position in which it is placed the maximum heating effect of the gas burner is obtained at the top of the oven and due to the positioning of the gas burner the flame
10 has its initial application of heat at the top of the oven, so that there is little or no loss of heat in its passage from the burner to the top of the oven. This provides maximum efficiency so far as the heating effect of the
15 gas burner to the oven is concerned.

Having described our invention, we claim:—

1. In a stove construction, an oven, a flue passage above the oven and extending
20 around an end and bottom of the oven, means providing a chamber at one side of the oven and adjacent the top of the oven, said chamber having direct communication with the flue above the oven, a gas burner in
25 said chamber, the products of combustion from said gas burner passing from the said chamber directly to the flue above the oven.

2. In a stove construction, an oven, a flue above the oven around an end of the oven
30 and at the bottom of the oven, a casing which extends from the top of the oven downwardly into the oven but is above the bottom of the oven, said casing having an opening at the top which communicates di-
35 rectly with the flue above the oven, a gas burner in said casing the products of combustion from which are delivered directly to the flue above the oven.

3. In a stove construction, an oven, a flue
40 above the oven, a side flue and a bottom flue, a casing located at one end of the oven and depending below the top of the oven,

one wall of said casing forming a wall for the oven said casing being open at the top and communicating directly with the flue 45 above the oven, a gas burner in said casing and serving to heat the wall of the casing which is adjacent the oven, the products of combustion from the burner being delivered directly to the flue passage which is 50 above the oven.

4. In a stove construction, an oven, a flue passage above the oven and extending around an end and bottom of the oven, means providing a chamber at one side of 55 the oven and adjacent the top of the oven, said chamber having direct communication with the flue above the oven, a gas burner in said chamber, the products of combustion from said gas burner passing from the said 60 chamber directly to the flue above the oven, and a damper means controlling communication between the casing and the top flue above the oven.

5. In a stove construction, an oven, a flue 65 above the oven, a side flue and a bottom flue, a casing located at one end of the oven and depending below the top of the oven, one wall of said casing forming a wall for the oven, said casing being open at the top 70 and communicating directly with the flue above the oven, a gas burner in said casing and serving to heat the wall of the casing which is adjacent the oven, the products of combustion from the burner being de- 75 livered directly to the flue passage which is above the oven, and a damper means controlling communication between the casing and the top flue above the oven.

In testimony whereof, we hereunto affix 80 our signatures.

HENRY A. AHRENS,
HARVEY B. HITESHEW.