

(No Model.)

2 Sheets—Sheet 1.

E. W. ANTHONY.
RANGE.

No. 435,006.

Patented Aug. 26, 1890.

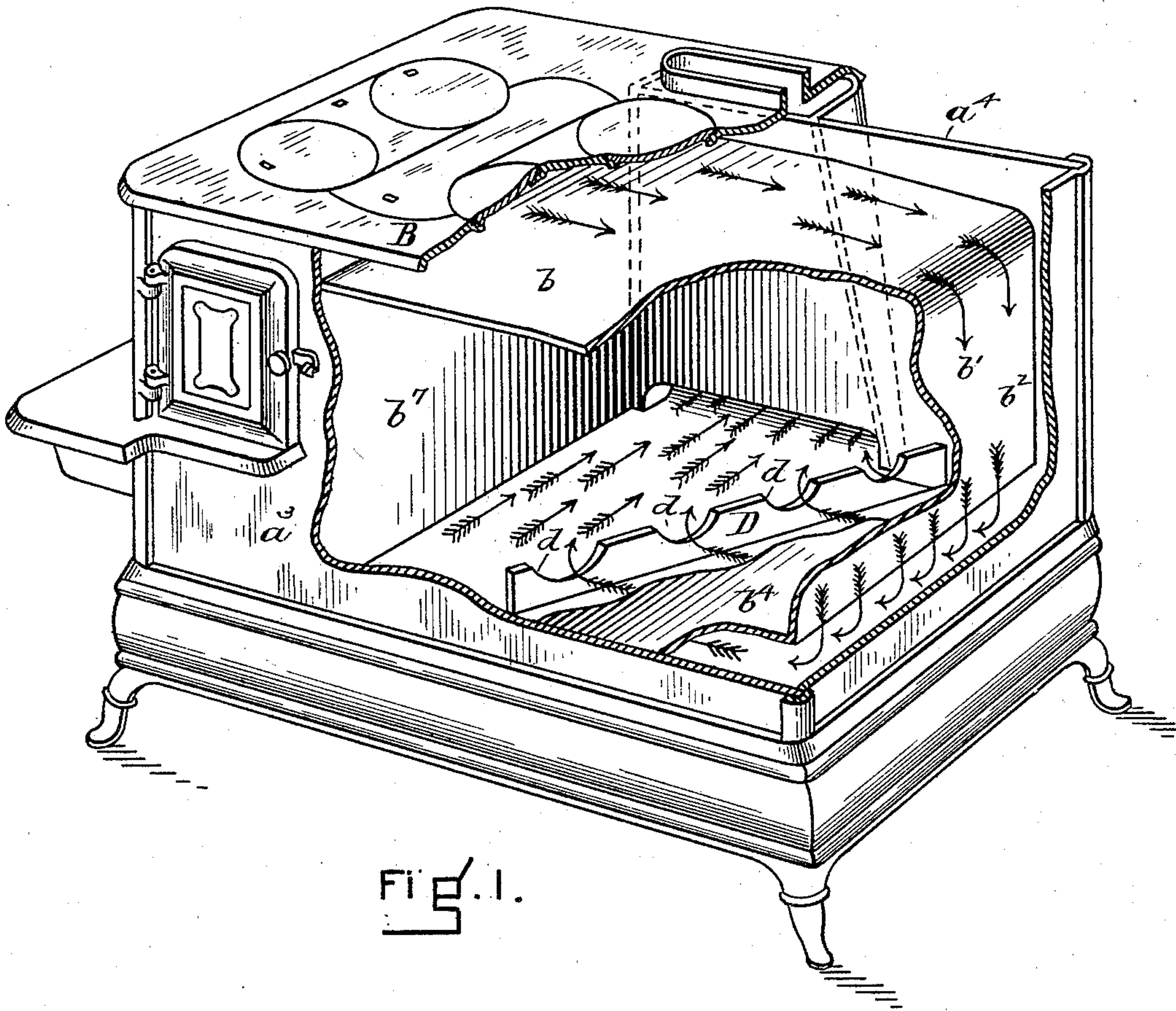


FIG. 1.

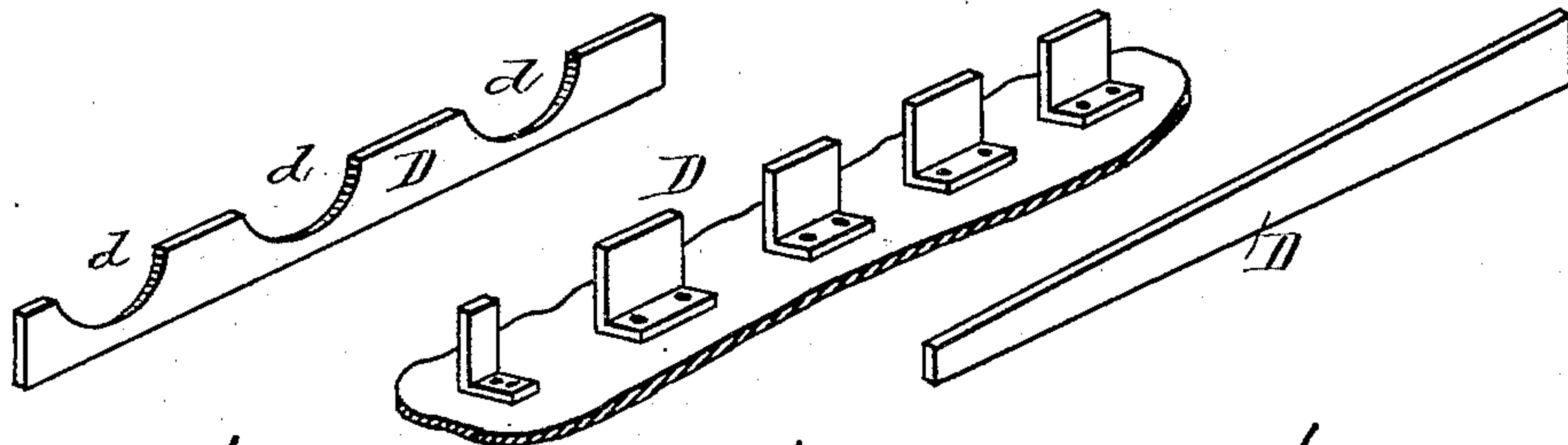


FIG. 5.

FIG. 6.

FIG. 7.

WITNESSES.

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Clark & Raymond

(No Model.)

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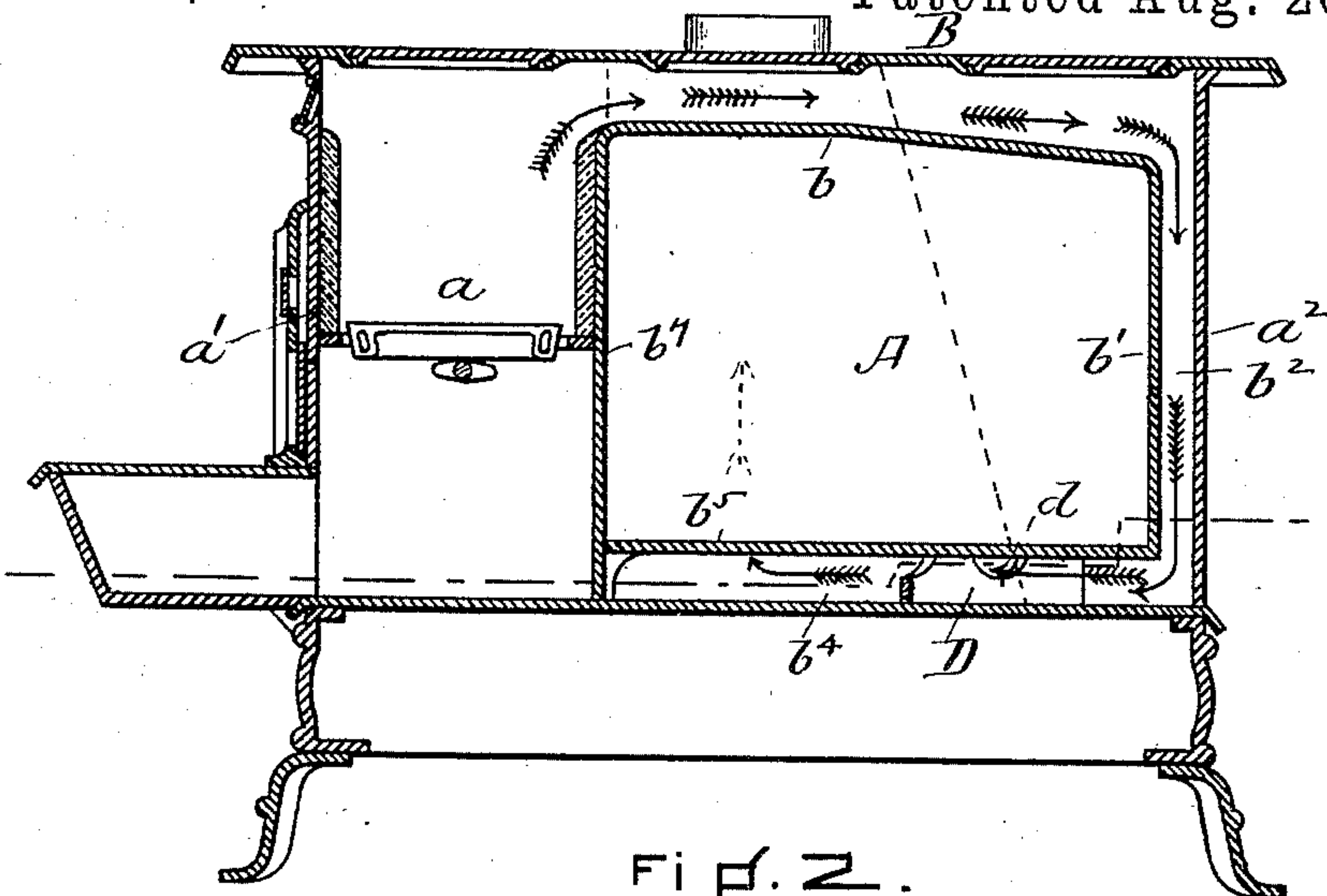


FIG. 2.

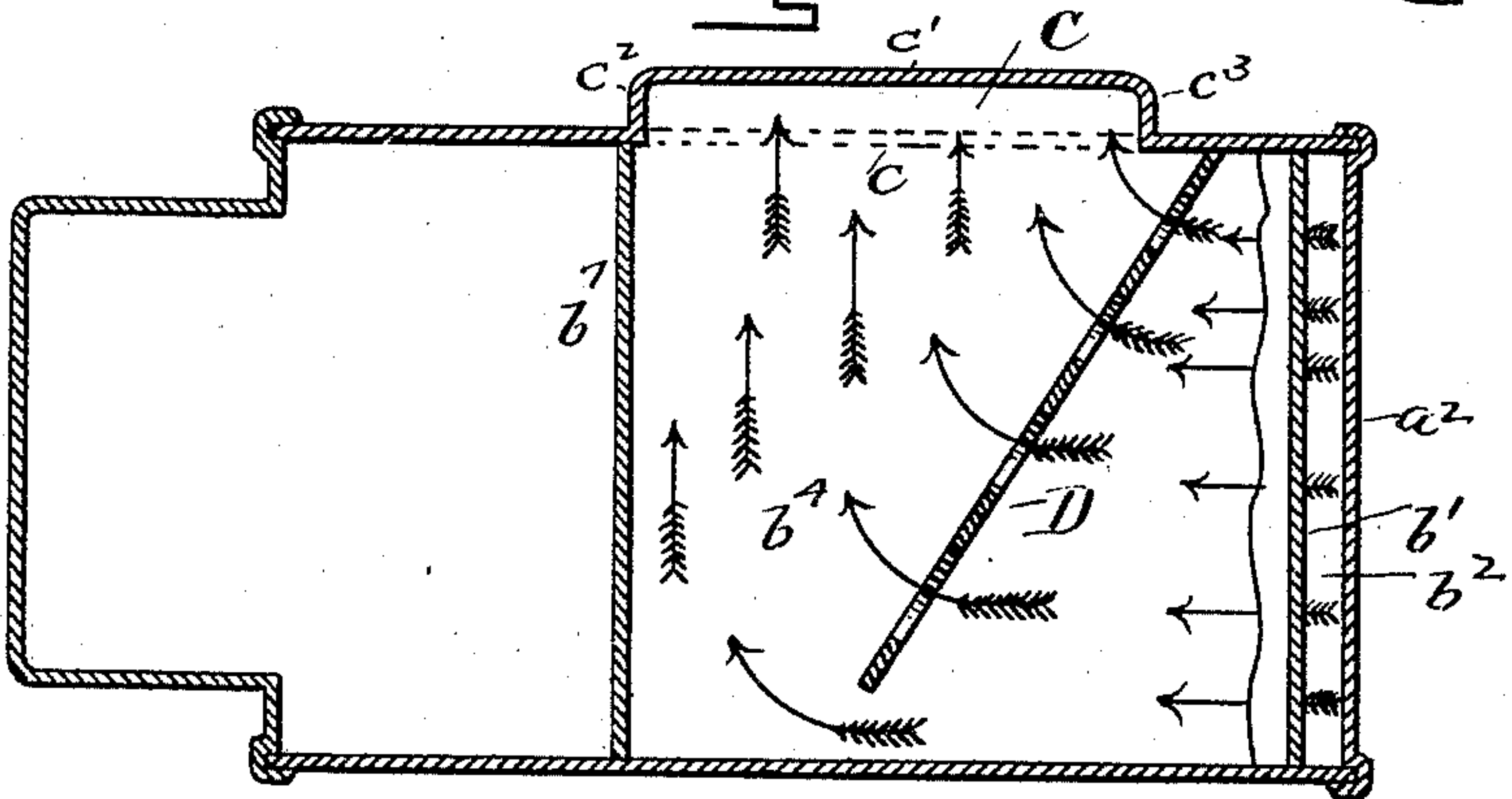


FIG. 3.

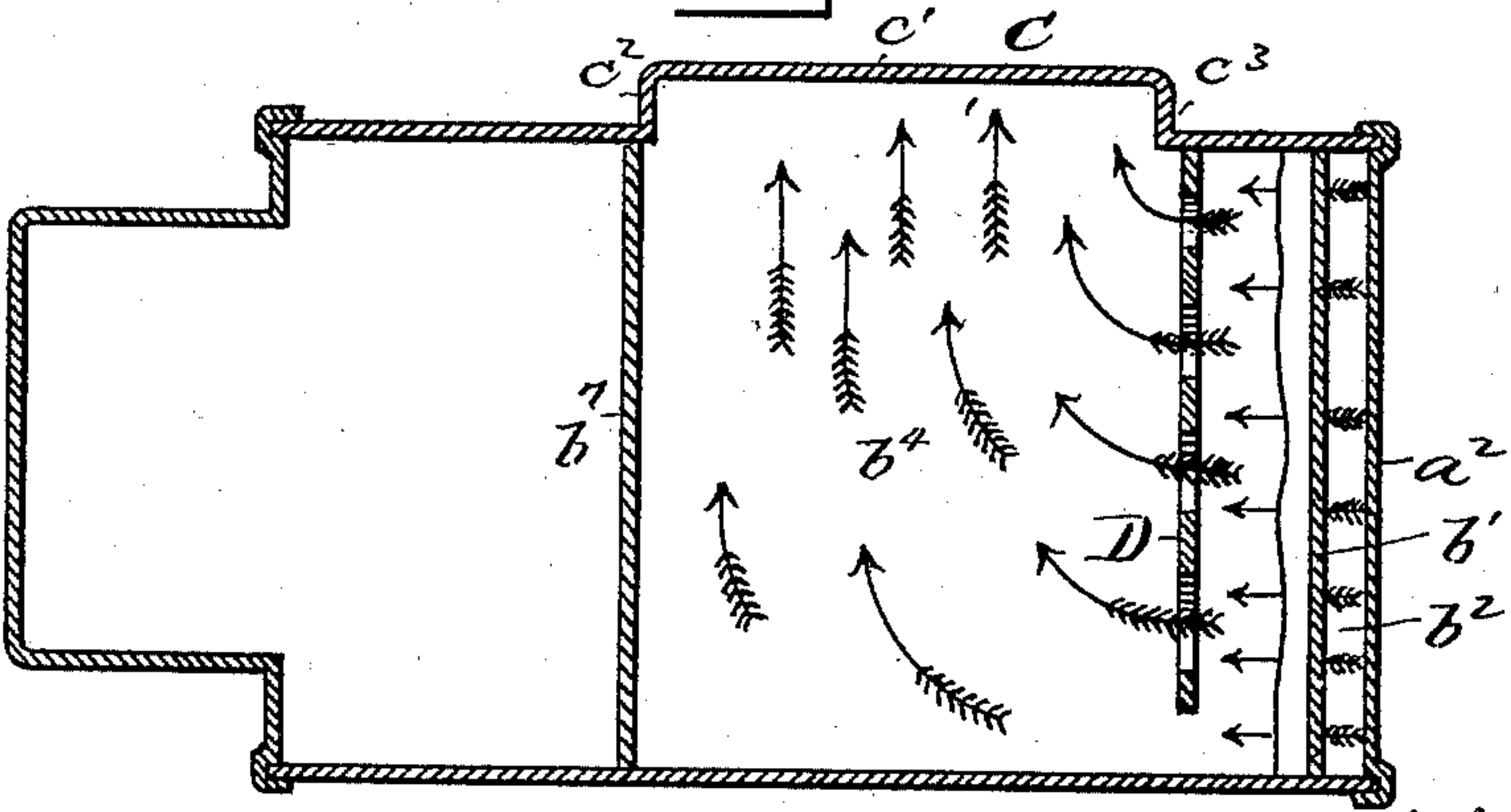


FIG. 4.

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UNITED STATES PATENT OFFICE.

EDGAR W. ANTHONY, OF BROOKLINE, MASSACHUSETTS.

RANGE.

SPECIFICATION forming part of Letters Patent No. 435,006, dated August 26, 1890.

Application filed April 7, 1890. Serial No. 346,894. (No model.)

To all whom it may concern:

Be it known that I, EDGAR W. ANTHONY, of Brookline, in the county of Norfolk and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Ranges, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to that class of ranges known as "whole-sheet-flue ranges"—that is, a range in which the products of combustion and heat pass over the oven down one side underneath the oven to an uptake upon the back of the range. In order that the products of combustion and heat may not pass directly from the lower end of the "downtake," as it is called, directly to the uptake upon the back, and thereby not properly heat the bottom of the oven, there has been arranged across the cavity below the oven which forms the flue a partition extending from the back wall of the range partially across the cavity or space to cause the products of combustion to pass between its front end and the front wall of the space. While this effects a better circulation of the products of combustion and heat as they pass through this portion of the flue to the uptake, still it causes a draft or circulation of such a nature that certain portions of the oven-bottom are not properly heated—namely, the portion where the partition-plate joins the rear wall and the portion at the corner immediately beyond the uptake. To obtain a better draft or circulation and distribute it so that the bottom of the oven shall be uniformly heated in all parts, I have provided the flue or cavity below the oven-bottom plate with a bridge-partition—that is, a partition which extends from the back wall of the range, preferably, though not necessarily, diagonally across the cavity to, or very nearly to, the front plate, and which plate is provided with openings, preferably, though not necessarily, graduated as to area or size, as hereinafter specified. I also arrange the uptake so that it extends from the rear back corner of the stove along the back of the stove any required distance, preferably to the end of the flue-plate, while at the same time I make it narrower than it

has heretofore been made for the purpose of providing a long narrow passage instead of a comparatively short wide passage, in order that the draft may be as nearly as possible from the side to the end of the partition-plate, and may be of the same degree or extent throughout the length of the opening to the uptake.

Referring to the drawings, Figure 1 is a view in perspective of a range containing my improvement, portions of the range being broken out to better illustrate the invention. Fig. 2 is a view in section thereof from side to side. Fig. 3 is a view in plan thereof below the bottom plate of the oven. Fig. 4 is a view in plan below the bottom plate of the oven, representing the flue-plate as occupying a different position from that represented in Fig. 3. Fig. 5 is a view of a flue-plate in which the openings are of the same area. Fig. 6 represents a flue-plate made of a number of independent sections attached to the bottom plate of the stove. Fig. 7 is a flue-plate representing the equivalent of openings of different areas obtained by a long opening varying as to width from one end to the other of the plate.

A represents the oven of a range; a , the fire-pot; a' , one side of the range; a^2 , the other side; a^3 , the front, and a^4 the back. The products of combustion pass from the fire-pot a over the top plate b of the oven, between it and the top plate B of the range, and of the full width of the range from front to back. They then pass downward by the side plate b' of the oven through the downtake b^2 , between the said side plate and the side plate b^3 of the range, and of the full width of the range from back to front. Thence into the cavity or chamber b^4 below the bottom plate b^5 of the oven and between it and the bottom plate b^6 of the range. Thence upward through the uptake C between the back plate c of the oven and the upwardly-extending section c' of the back wall of the range. The lower cavity or chamber b^4 has extending across it a partition or flue plate D . This plate extends from the back plate c of the range entirely across or almost entirely across the cavity or chamber. It may extend across the same diagonally, as represented in Figs. 1 and 3, or it may extend across the same at a right angle

to the back, as represented in Fig. 4. I much prefer the first-named arrangement. In the plate D there are formed openings d . These openings may be of the same area as represented in Fig. 5, or they may be of different areas, as represented in Fig. 7. I prefer the last-named arrangement, and also that they be so graduated that the opening of the smallest area shall be nearest the back plate c and the opening of largest area nearest the front plate b^2 , and the intermediate openings graduated regularly from the smallest to the largest. A circulation or draft from one flue to another is almost invariably by the shortest route; but if the circulation is retarded or prevented from taking this shorter course it must of necessity take the longer course, and in my present invention I have adjusted the relative size of the openings in the partition-plate so that a sufficient retardation takes place from one end of the plate to the other to cause the circulation or the products of combustion to seek or be drawn through all the openings of the plate in order to reach the uptake, and the increased area of the more remote or indirect openings compensating for the smaller and more direct openings. I facilitate this action of the circulation by the shape of the uptake. This has heretofore been comparatively short from side to side and wide from front to back, and I have widened it at its point of connection with the cavity or chamber, and narrowed it so that it extends from the corner c^2 , or intersection of the front plate b^7 of the oven with the rear plate c of the range, to the point c^3 , close or adjacent to the point where the partition-plate D joins the rear plate c , and I have contracted or narrowed the space between the rear plate c of the oven and the parallel portion of the section c' . By this means an opening of practically the entire side or end of that portion of the chamber or cavity below the bottom plate of the oven and in front of the partition-plate into the uptake is obtained, and no dead-air space or space not open to the circulation is provided, as in other constructions. Of course the partition-plate D may not be in one piece throughout, as the openings may be formed by separate pieces or sections fastened to one or the other of the two plates $b^5 b^6$. In lieu of a bridge partition-plate having separate openings, the same effect may be obtained by making a bridge-

plate with a continuous opening increasing in height from the rear end of the plate to the front end, so that the area of the opening increases in size from the rear to the front end of the plate, and the retardation of the circulation decreases from the rear to the front, (see Fig. 7,) where such plate is shown.

In use the products of combustion pass over the top plate b of the oven in a wide thin body, then downward at the side of the side plate b' , then through the chamber b^4 in a wide body, which is maintained throughout the chamber or cavity and about the turn to the uptake, because of the retarding, guiding, and directing character of the bridge partition-plate, and this insures a uniform heating of the entire bottom plate b^5 of the oven at all points, which is a very desirable result to obtain.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a whole-sheet-flue range, a partition or flue-plate arranged in the flue cavity or space below the bottom plate of the oven, having a graduated opening or openings therein increasing in size or area from the point where the circulation or draft is stronger, as and for the purposes described.

2. The combination, in a whole-sheet-flue range, of the downtake b^2 , the flue chamber or cavity b^4 below the bottom plate of the oven, the uptake C, and a partition or flue plate D, extending diagonally across the flue-chamber b^4 and having one or more openings which are enlarged or have greater area as the plate recedes from the down and up take, as and for the purposes described.

3. In a stove or range, an uptake C upon the back, connected at its lower end with the flue chamber or cavity below the bottom plate of the oven by a long and narrow opening extending from the corner formed by the meeting of the front and back plates of the flue-chamber to or nearly to the point at which the partition-plate extends from the back plate across said flue chamber or cavity, in combination with said partition-plate, as and for the purposes described.

EDGAR W. ANTHONY.

Witnesses:

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J. M. DOLAN.