

(No Model.)

P. KLOTZ.
RANGE.

No. 364,116.

Patented May 31, 1887.

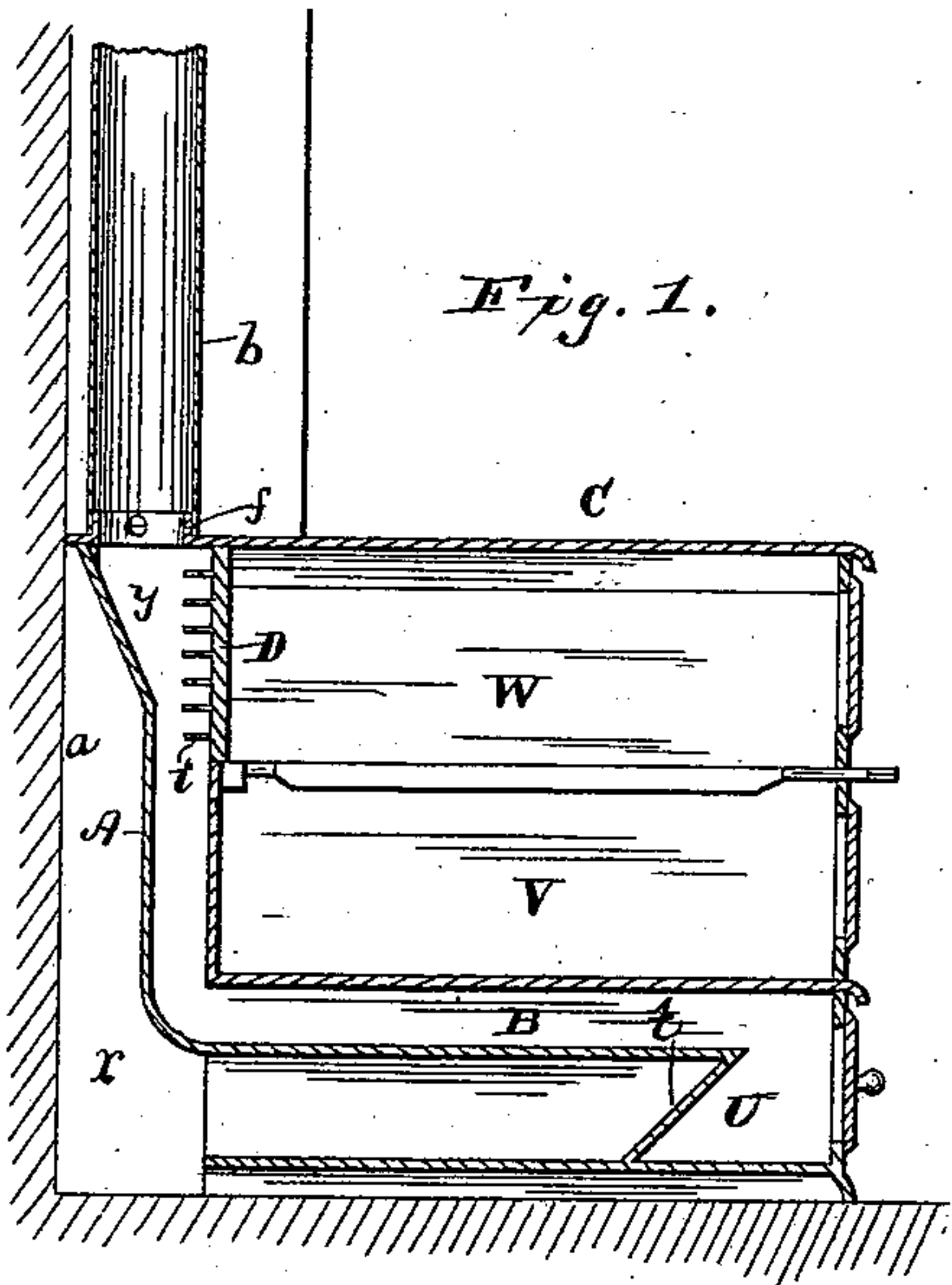


Fig. 1.

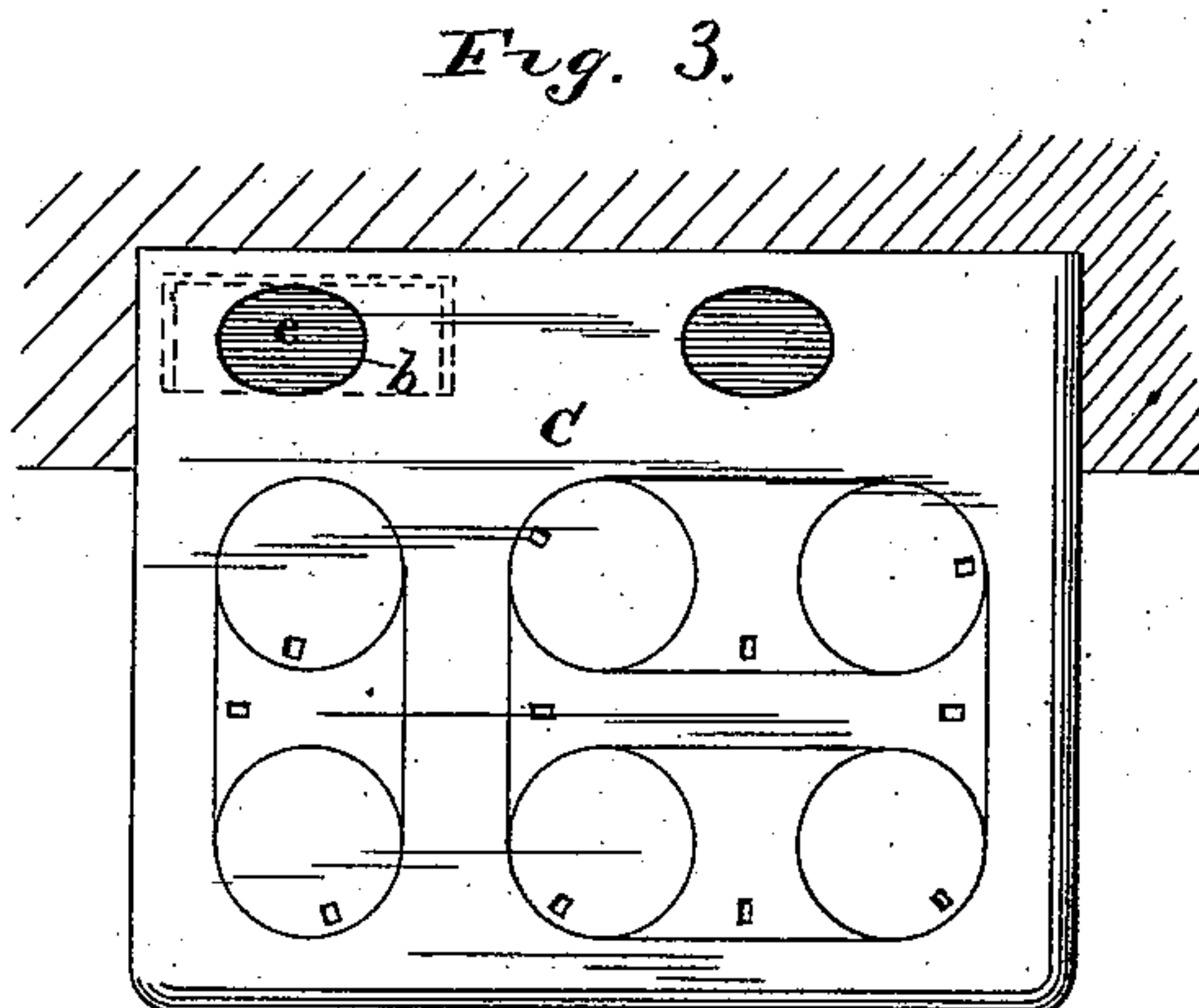


Fig. 3.

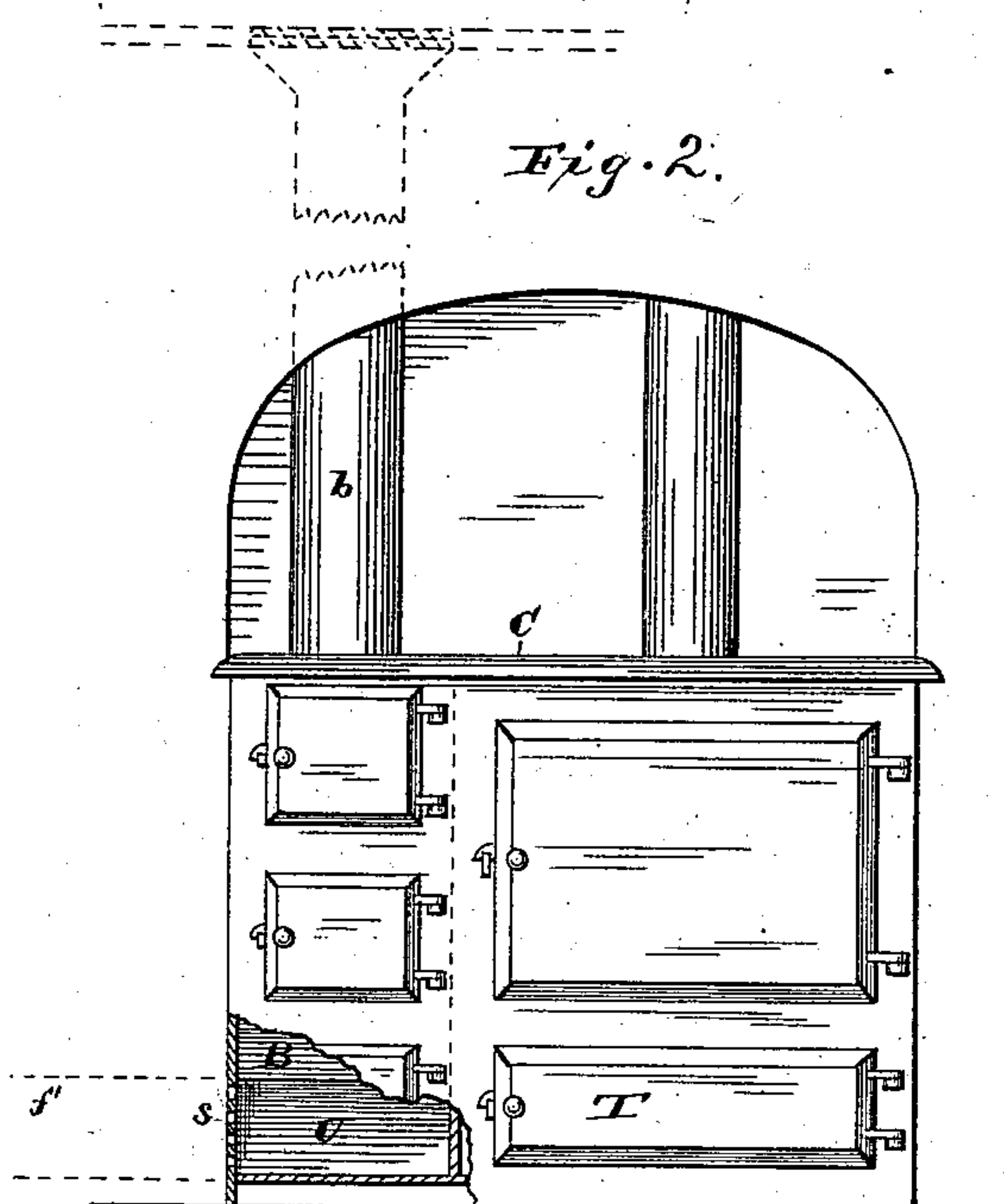


Fig. 2.

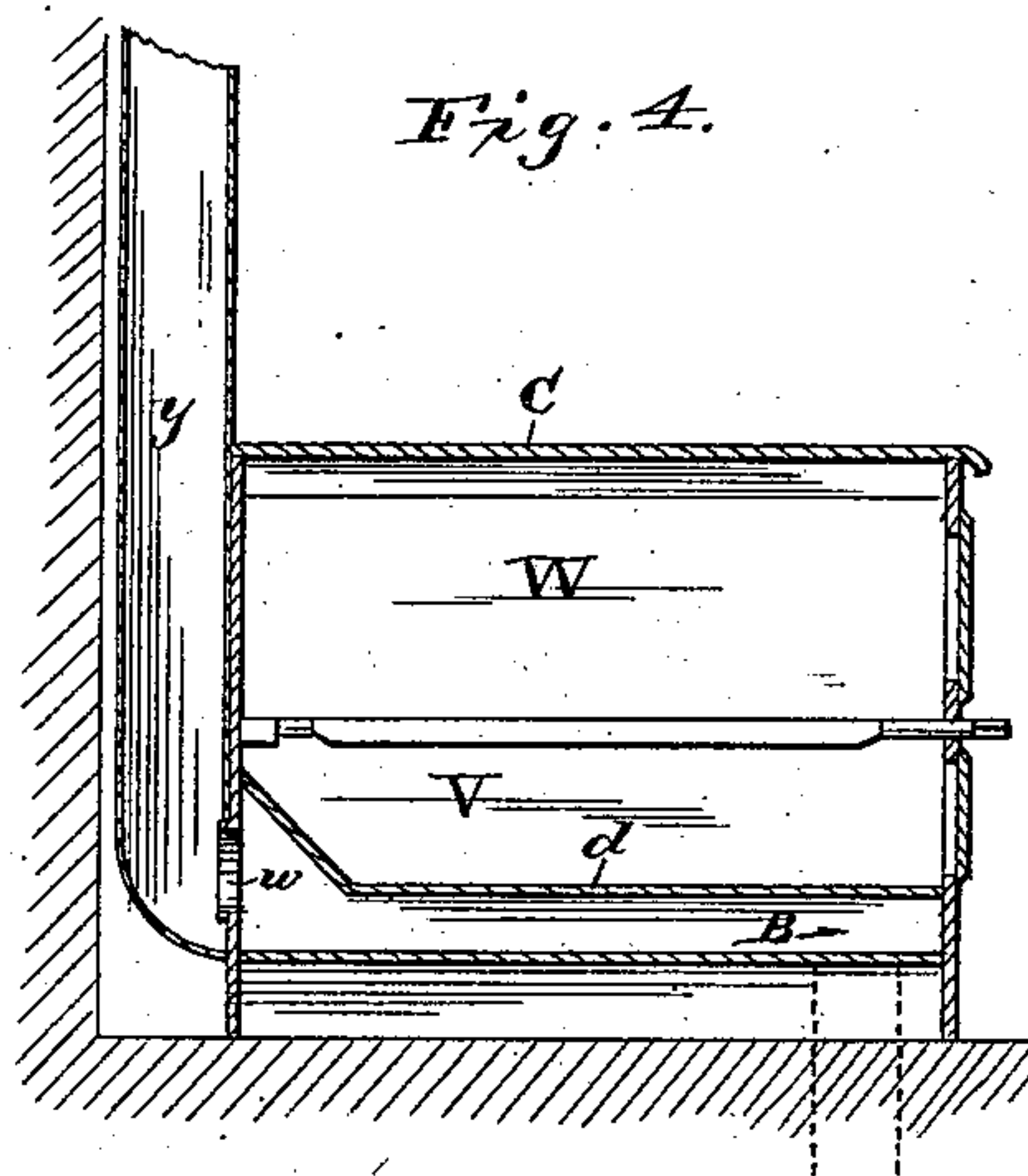


Fig. 4.

Witnesses.
Chas. R. Burr.
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Inventor
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UNITED STATES PATENT OFFICE.

PHILIP KLOTZ, OF BALTIMORE, MARYLAND, ASSIGNOR TO BENTLEY C. BIBB, OF SAME PLACE.

RANGE.

SPECIFICATION forming part of Letters Patent No. 364,116, dated May 31, 1887.

Application filed May 21, 1886. Serial No. 202,907. (No model.)

To all whom it may concern:

Be it known that I, PHILIP KLOTZ, a citizen of the United States, residing in the city of Baltimore, State of Maryland, have invented certain new and useful Improvements in Ranges, of which the following is a specification.

My invention relates to that class of cooking-ranges constructed to heat a supply of air which is conducted to an upper apartment to heat the latter; and my invention consists in constructing a range, as fully set forth hereinafter, so as to impart an increased temperature to the air used for heating the upper apartment, and so as to avoid reducing the temperature of the oven.

In the accompanying drawings, Figure 1 is a transverse sectional elevation of a range placed in position and illustrating my improvement. Fig. 2 is a front elevation, partly in section; Fig. 3, a plan, the brick-work in section; Fig. 4, a sectional elevation showing a modification.

Heretofore it has been common to arrange cooking-ranges so as to form at the rear thereof, between the back plate of the oven and the wall *a*, a chamber which is supplied with air, and from which a conducting-pipe extends to a room above, so that the air heated by contact with the back plate of the stove may serve as a means of heating the upper room. While this arrangement is effective in securing a certain amount of heated air for the upper apartment, the air is not very highly heated, and the chilling of the back plate of the oven is most detrimental to the efficiency of the range.

To overcome these objections, I provide the range having the usual fire box or chamber separated from the oven by a partition, (shown by dotted lines, Fig. 2,) with an air-heating chamber, *y*, at the back of the fire-chamber or fire-box and ash-pit, and having no connection with the chamber *x*, and I admit the air to the said chamber *y* and conduct it through a pipe, *b*, to the room or other place to be supplied with heated air without contact with or chilling any portion of the range which should remain in a heated condition.

Different arrangements may be employed for forming the chamber *y* at the rear of the

fire-place and for admitting air to and conveying it from the said chamber.

In Figs. 1, 2, and 3 the chamber *y* is illustrated as contained within a casing, *A*, covering the rear walls of the fire-chamber *W* and ash-pit *V*, and air is admitted to the lower end of the said casing through a horizontal flue, *B*, extending beneath the bottom of the ash-pit *V*, through the chamber *U*, below the ash-pit, and adjacent to the warming-closet *T*, and air is admitted to the chamber *U* through openings *s* in the side plate of the range. The rear wall of the chamber *U* is formed by a forwardly-projecting deflector-plate, *t*, which serves to direct the inflowing air against the bottom of the ash-pit at the mouth of the flue *B*, so that the air in passing through the latter will be partially heated by contact with the ash-pit bottom before ascending into the chamber *y*. The top plate, *C*, of the stove is provided above the chamber *y* with an opening, *e*, surrounded by a collar, *f*, to which the hot-air pipe *b* is applied, so that the pipe *b* may be removed and a cap applied to the collar whenever it is desired to prevent the heat from rising to the upper room during warm weather.

When the parts are in the position shown in Figs. 1, 2, and 3, the cold air entering through the openings *s* passes through the flue *B* into the lower part of the chamber *y*, rises in contact with the heated rear plates of the ash-pit and fire-box, and passes through the opening *e* into the pipe *b*, and thence into the room to be heated.

In order to secure a more rapid heating of the air, and to impart a higher temperature, I construct the back plate, *D*, of the fire-box so as to present a more extended surface to the air in the chamber *y*. Thus the back plate may have projecting pins *t*, as shown in Fig. 1, or it may be ribbed, or waved, the heating-surface being thereby increased in area.

Where the top plate of the range does not project beyond the back plate of the stove, a separate plate may be employed to cover the chamber *y*, or the opening *e* may be put in communication with a flue formed in the brick-work.

In Figs. 1, 2, and 3 I have shown a construction which has proved to be effective in ranges

manufactured for the purpose of embodying my improvement; but the improvement may be embodied in ranges of ordinary construction by using a pipe at the back of the fire-chamber and ash-pit to form the chamber *y*, as shown in Fig. 4, and by inserting a false bottom, *d*, in the ash-pit, so as to form the flue B, an opening, *w*, being made in the back wall of the ash-pit to form a communication between the flue and chamber *y*.

The cold air, instead of passing from the room in which the range is used, may be conducted to the flue B or to the openings *s* by means of an air-pipe, *f*, as shown in dotted lines, Fig. 2, or by an opening from the cellar, (dotted lines, Fig. 4,) or by a pipe communicating with the outside air.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. A cooking-stove having a fire-box extending to the back wall of the stove, an oven separated by its side wall from the fire-box, a chamber or space extending across the back of the stove from end to end, and an air-heating chamber, the back of the stove or fire-box constituting the front wall of said chamber, which is separated from said space, substantially as described.

2. A cooking-stove provided with a fire-

box extending to the back wall thereof, an oven at one side of said box, a cold-air inlet at the base, a space along the rear of the stove, and a flue extending from said inlet below the ash-pit to an air-chamber at the back of the stove independent of said space, substantially as described.

3. A cooking-stove provided with an air-flue extending under and parallel with the ash-pit, and a vertical casing extending at the rear of the ash-pit and fire-chamber, substantially as described.

4. The combination, in a cooking stove, of the fire-box extending to the rear wall of the stove, ash-pit, side oven, horizontal flue extending beneath the ash-pit, space extending across the rear of the stove, and vertical casing immediately in rear of the fire-box communicating with the horizontal flue and extending through the space at the rear of the stove without communicating therewith, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PHILIP KLOTZ.

Witnesses:

GEO. McCaffray,
A. D. STEHMAN.