

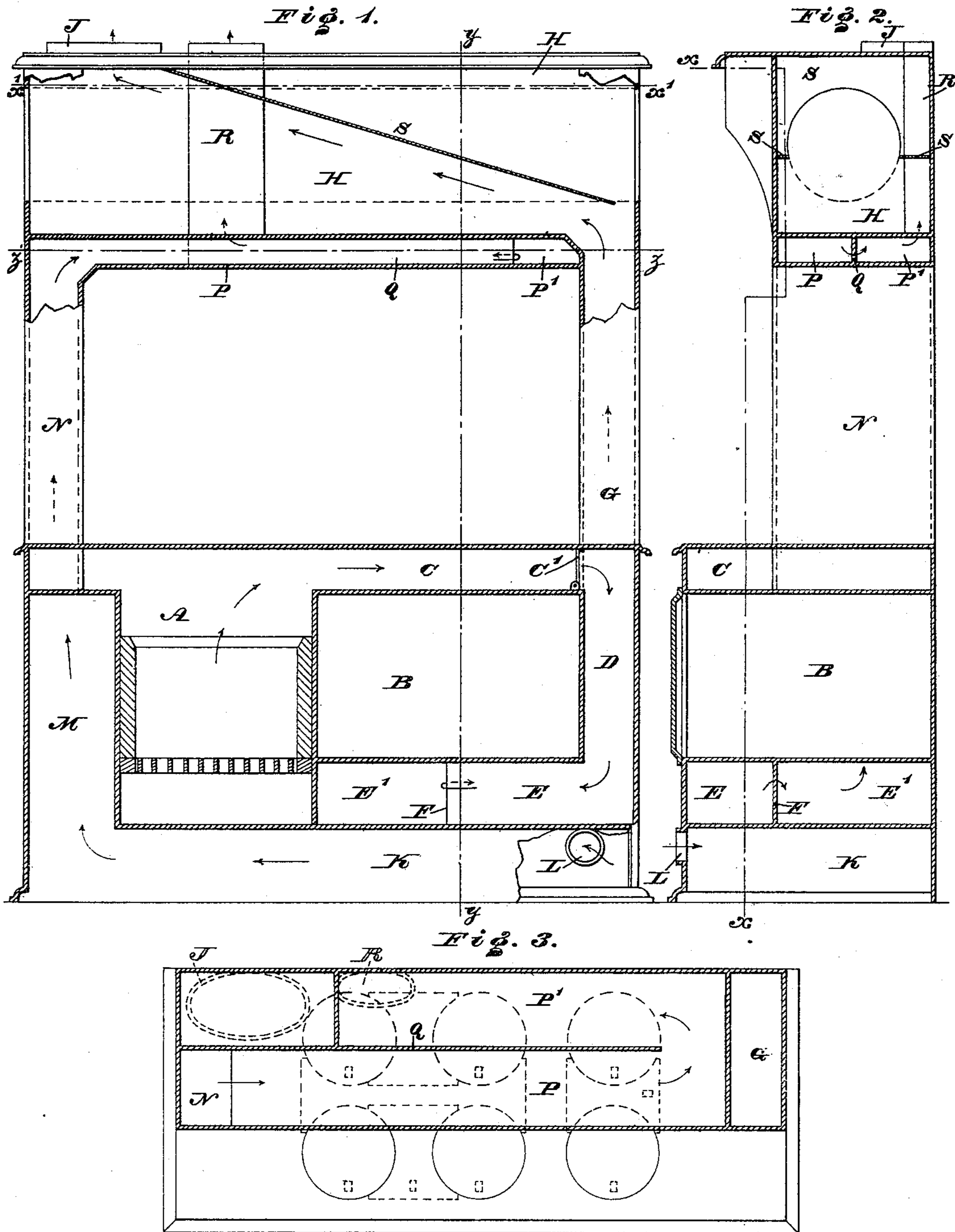
(No Model.)

J. MANDER.

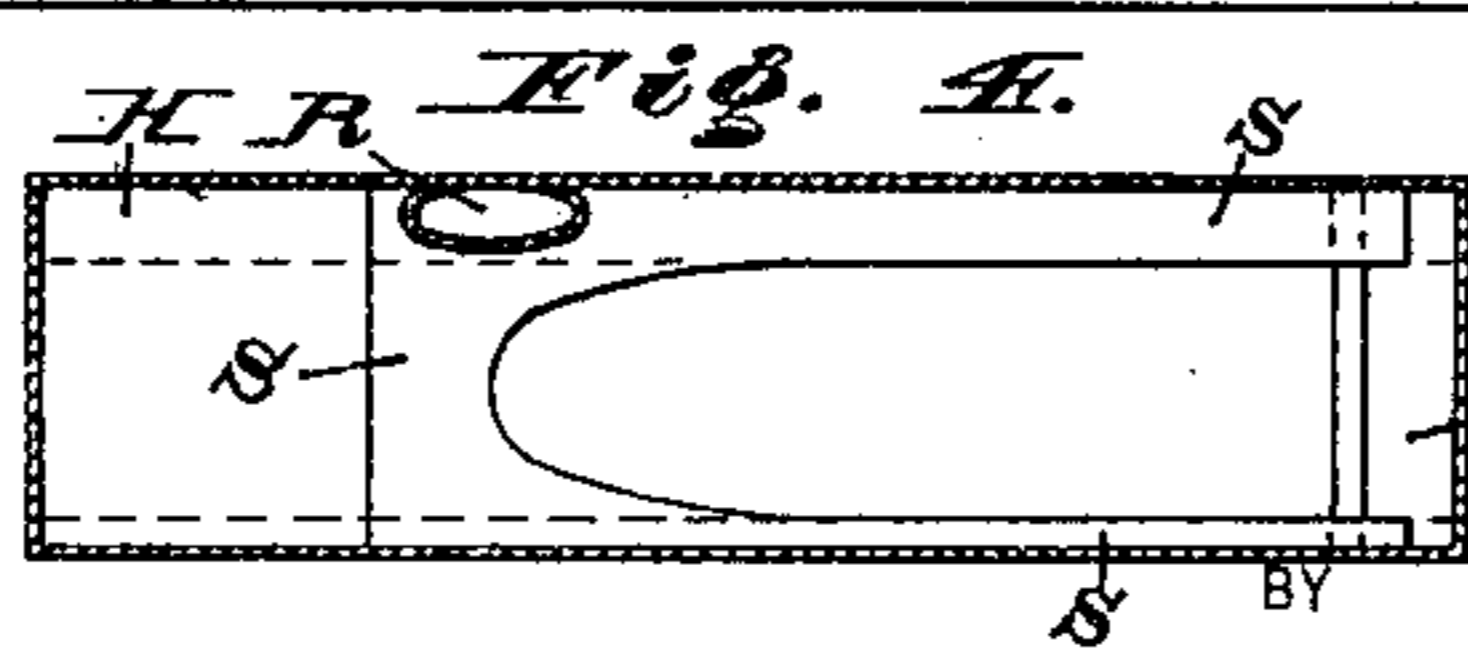
RANGE.

No. 353,871.

Patented Dec. 7, 1886.



WITNESSES:
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RANGE.

SPECIFICATION forming part of Letters Patent No. 353,871, dated December 7, 1886.

Application filed April 16, 1886. Serial No. 199,064. (No model.)

To all whom it may concern:

Be it known that I, JOHN MANDER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Ranges, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a longitudinal vertical section of a range embodying my invention in line *x x*, Fig. 2. Fig. 2 represents a transverse vertical section thereof in line *y y*, Fig. 1. Fig. 3 represents a horizontal section thereof in line *z z*, Fig. 1. Fig. 4 represents a horizontal section in line *x' x'*, Fig. 1, on a reduced scale.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a portable range, substantially as hereinafter set forth, the same having a chamber to contain a boiler, and formed with flues for hot air and the products of combustion, whereby the range is effective in operation, and owing to its nature avoids brick-work or masonry for setting-up purposes.

Referring to the drawings, A represents the fire-chamber of a range, and B the oven thereof.

Above the oven is a flue, C, which extends horizontally and communicates with a vertical flue, D, at the side of the oven. Below the oven are horizontal flues E E', between which is a vertical partition or diaphragm, F, which is open at one end, whereby said flues are in communication.

At the side of the range is a vertical flue, G, which is in communication with a boiler-receiving chamber, H, at the top of the range, said chamber having an outlet, J.

At the bottom of the range is a chamber, K, having an inlet, L, whereby said chamber may be supplied with air, and at the side of the fire-chamber opposite to the oven is a vertical flue, M, with which is in communication a vertical flue, N, the latter being opposite to the flue G, it being noticed that the flues G N constitute the side jambs of the range.

Below the boiler-receiving chamber H are horizontal flues P P', between which is a vertical partition or diaphragm, Q, open or separated at one end, whereby the flues are in communication. The flue P is in communication with the flue N, and the flue P' is in communi-

cation with a vertical pipe, R, which constitutes the outlet of said flue P', and is located, in the present case, in the back of the range, at the top thereof.

The top of the pipe R is provided with a collar, or forms a collar, for attachment of a pipe or flues, whereby the hot air escaping through said pipe R may be directed to an apartment to be heated by the same.

It will be seen that the products of combustion from the chamber A enter the flue C, and pass thence into the flue D, the flues E E', flue G, and boiler-receiving chamber H, and escape at the outlet or collar J, by which they are directed into the chimney, it being evident that the boiler is heated by the products of combustion. In order to prevent said products rising to the top of the chamber H, the inner sides of the same have connected with them flanges S, which extend in inclined direction from the inlet end to the outlet end of said chamber H, and act as deflectors, directing the products of combustion along the sides and under the bottom of the boiler.

Cold or fresh air enters the bottom chamber, K, and is directed to the flue M, it being heated by the walls or plates of the flues E E', the base of the ash-pit, and side of the fire chamber A, the hot air then entering the flue N and passing thence through the flues P P' into the pipe R, whence it is directed by suitable pipes or flues to the place of service or apartment to be heated.

It will also be seen that the entire range is made of plates of cast-iron, and obviates the use of brick-work or masonry for setting-up purposes, and, owing to the air-chamber at the bottom, the range may be placed directly on the floor, and it is also readily portable, being alike strong and durable.

The flue C has a damper, C', whereby the products of combustion may be directed into the flue G when a quick fire is required.

It will also be seen that the hot-air passages are entirely distinct and separate from the flues which convey the products of combustion, so that gas and smoke are prevented from entering the former. The flues P P' are heated by the products of combustion passing through the chamber H and the heat rising from the top proper of the range.

Having thus described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

1. A range having the bottom air-chamber, K, with inlet-opening L, the side air-flue, N, 5 the fire-chamber A, and the combustion-flue G, forming side jambs for said range, all of said parts being combined and arranged substantially as and for the purpose set forth.

2. A range having the fire-chamber A and 10 oven B, the vertical flue D, the horizontal flue C, leading to the said vertical flue D, the horizontal flues E E', having partition open at one end, vertical flue G, and the boiler-receiving chamber H, having outlet J, all combined and 15 arranged substantially as and for the purpose set forth.

3. A range having the fire-place A, and adjacent oven B, the flues C, D, and E, passing, respectively, over the top, side, and bottom of 20 said oven B, the vertical combustion-flue G, the boiler-receiving chamber H in upper part of the range, and the hot-air-discharge pipe R, passing through said chamber H, all of said parts being combined and arranged substan- 25 tially as described.

4. A range having the fire-place A and adjacent oven B, the flues C, D, and E, passing

around said oven, the flue G, leading to the boiler-receiving chamber H, the chamber H, the bottom air-chamber, K, having flues M, N, 30 and P, and outlet-pipe R, said combustion chambers and flues and said air-chamber and flues being independent of and separate from each other, all of said parts being combined and arranged substantially as described. 35

5. In a range, a boiler-receiving chamber, H, located in the upper part of the range, in combination with the flanges S, projecting inwardly from the sides of said chamber H and inclined from the inlet to the outlet of the said 40 chamber, all substantially as described.

6. In a range, the boiler-receiving chamber H, in combination with the fire-chamber A and combustion-flues C, D, E, and G, and the air-chamber K, with flues M, N, and P, and 45 pipe R, passing through said chamber H, and flanges S, constructed and arranged substantially as described, all substantially as and for the purpose set forth.

JOHN MANDER.

Witnesses:

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