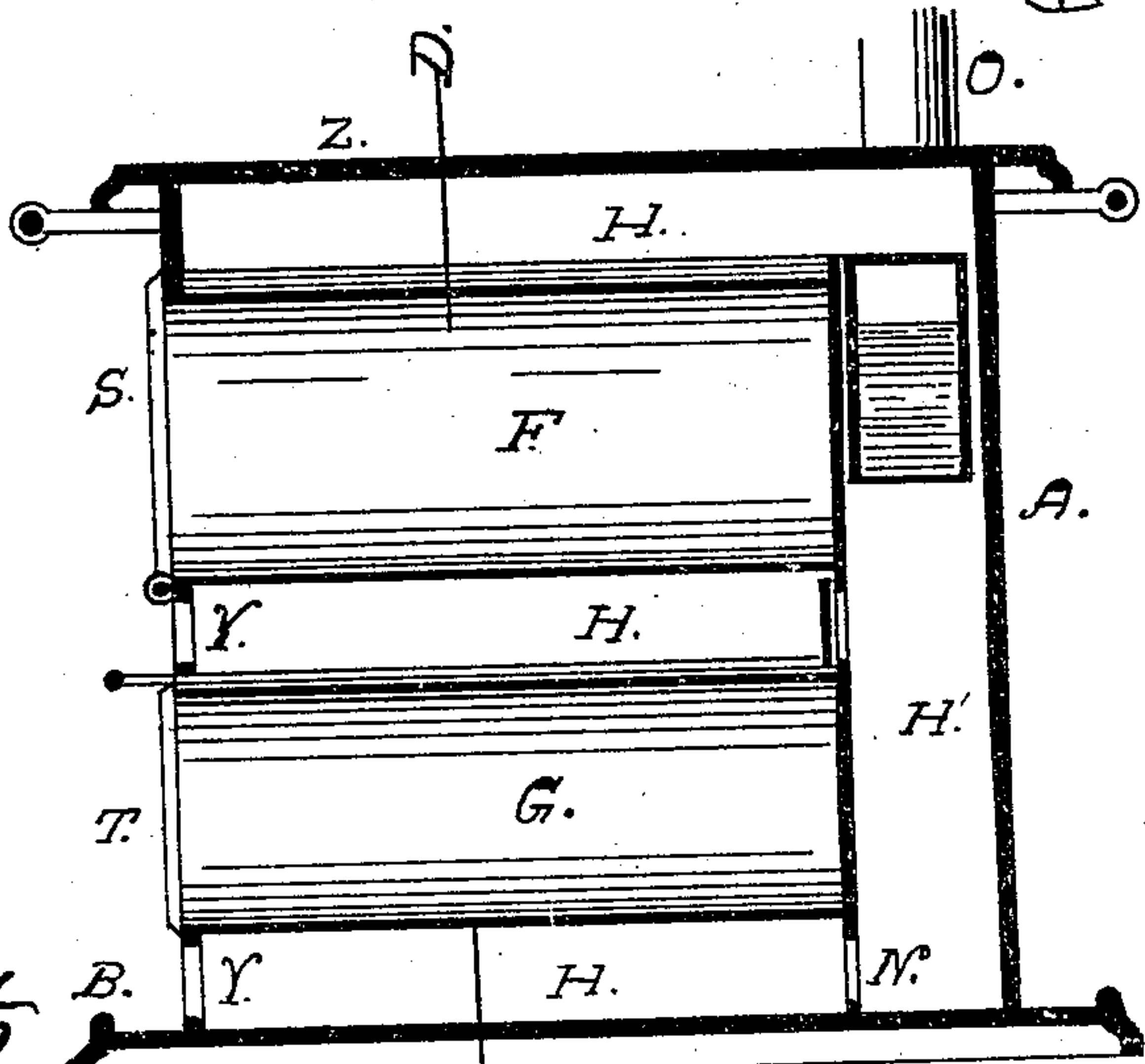
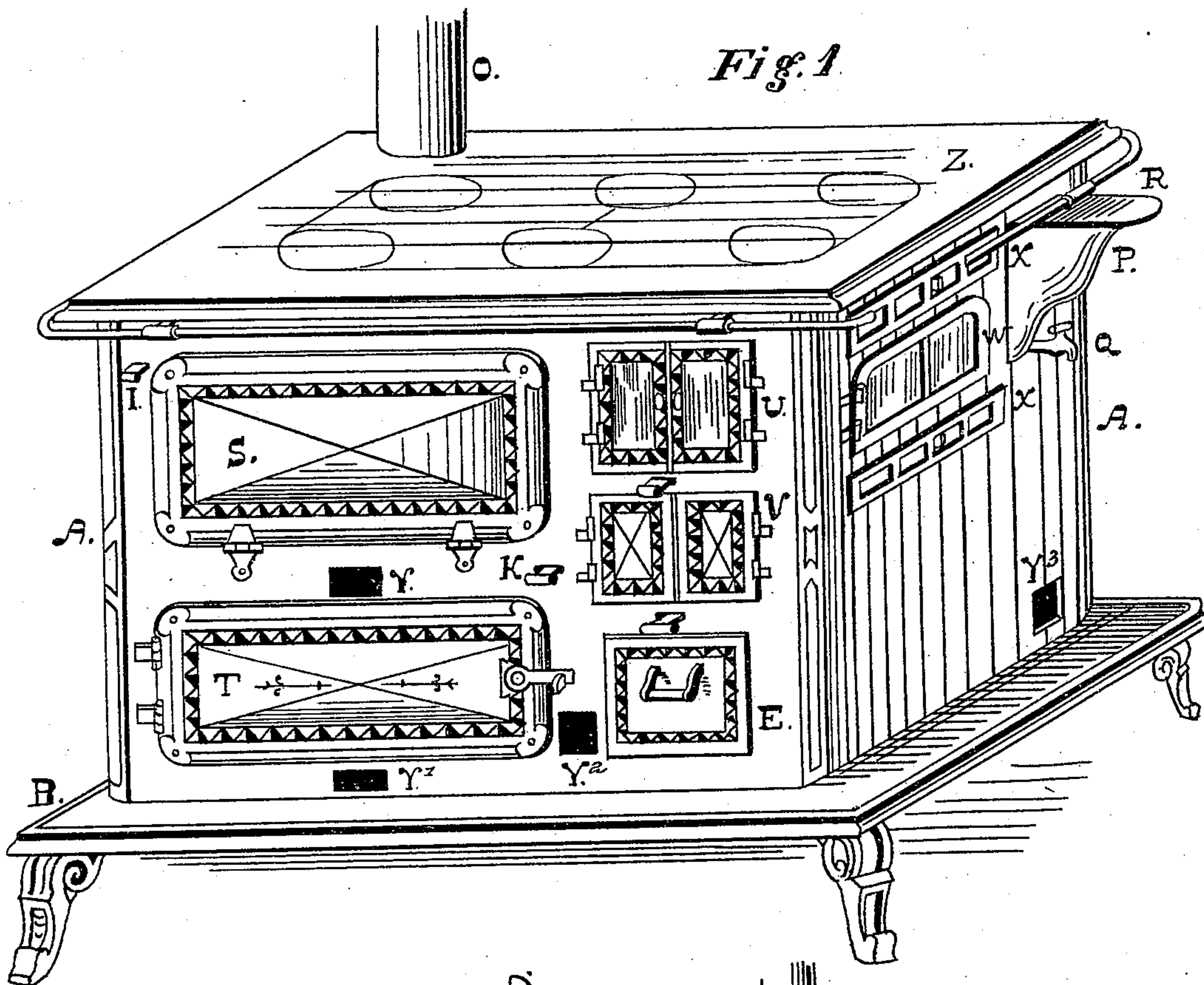


A. BICKEL.  
RESERVOIR COOKING-STOVE.

No. 175,551.

Patented April 4, 1876



WITNESSES:

*Franklin Lufsky.*

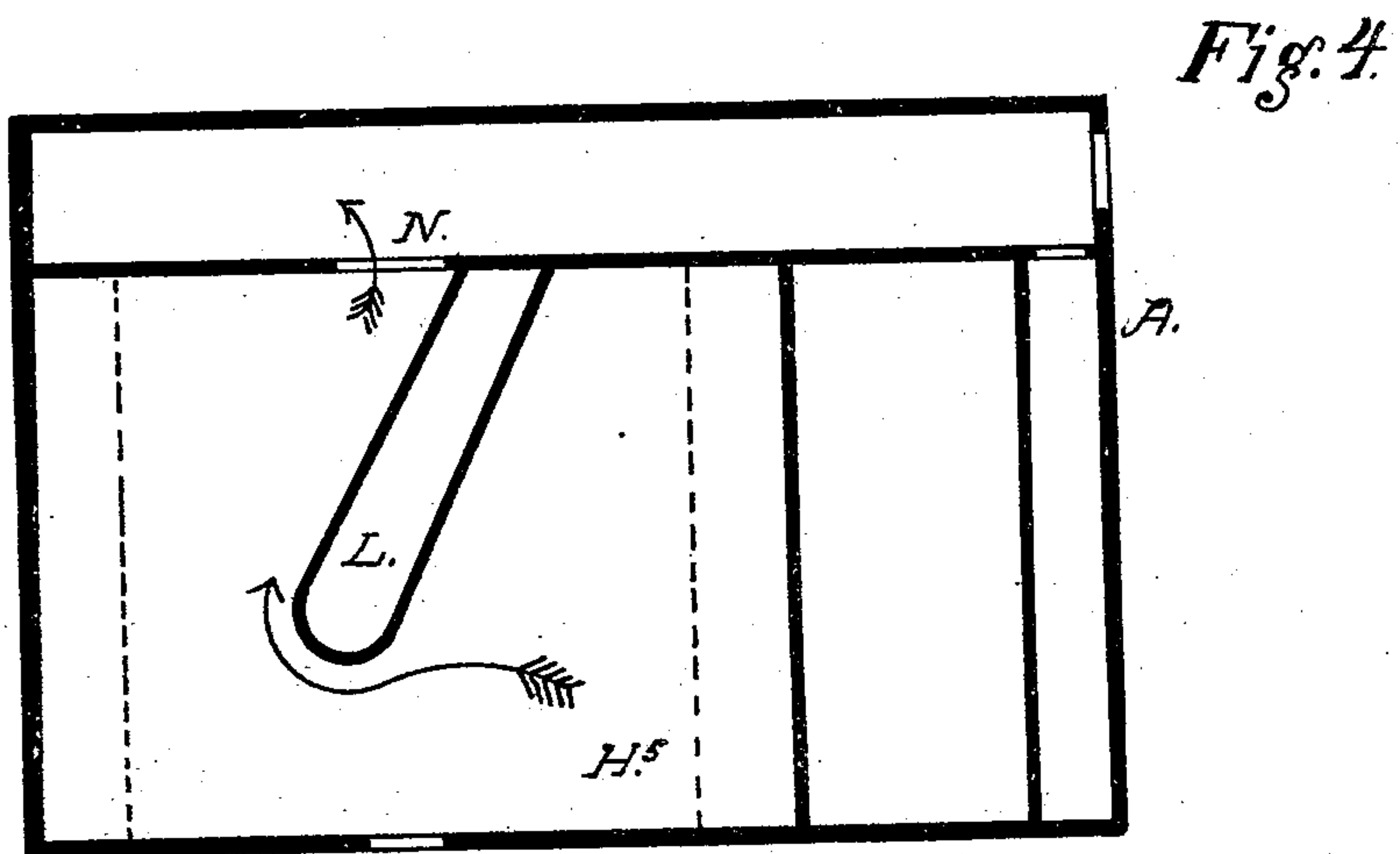
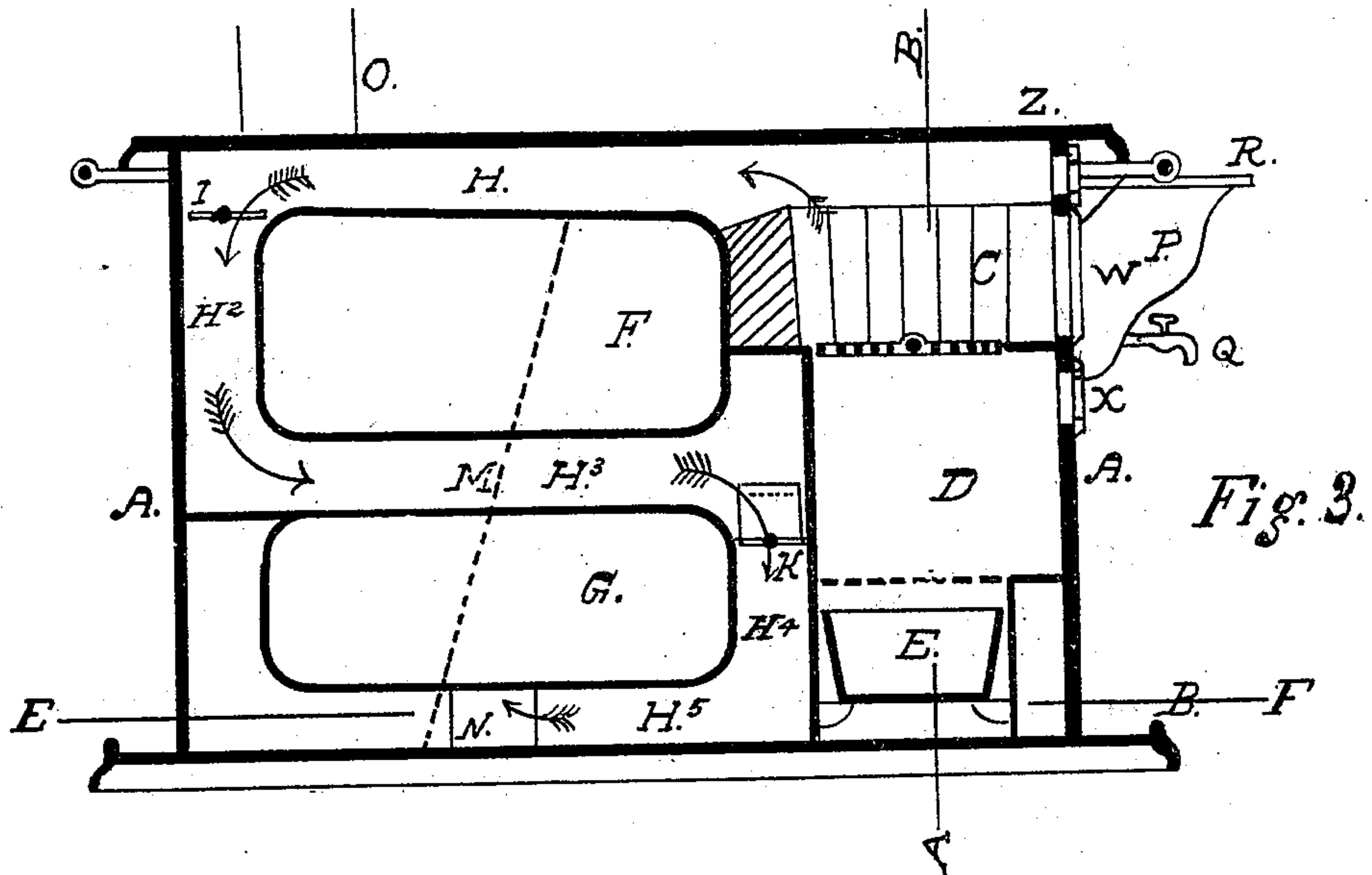
INVENTOR:

*Anton Bickel*

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WITNESSES:

*E. M. Aouts*  
*Franklin Lufky*

INVENTOR:

*Anton Bickel*



# UNITED STATES PATENT OFFICE.

ANTON BICKEL, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF ONE-HALF HIS  
RIGHT TO JACOB KAEMPFER, OF SAME PLACE.

## IMPROVEMENT IN RESERVOIR COOKING-STOVES.

Specification forming part of Letters Patent No. **175,551**, dated April 4, 1876; application filed  
August 9, 1875.

*To all whom it may concern:*

Be it known that I, ANTON BICKEL, of the city of Milwaukee, in the State of Wisconsin, have invented a new and useful Improvement in Cooking-Stoves, (sometimes called "ranges,") in combination with water-reservoir, of which the following is a specification:

Figure 1 is a perspective view of my stove and reservoir. Fig. 2 is a vertical section through the narrower width. Fig. 3 is a vertical section taken lengthwise. Fig. 4 is a horizontal section taken from near the base of the stove.

Like letters of reference indicate like parts.

C is the fire-pot; D, the receptacle for ashes and cinders. E is the ash-box, so constructed as to be drawn out without opening a door by means of handle shown in Fig. 1. F is the upper oven, and G the lower. There are dampers at I and K. The flues are indicated as follows: the top flue by H, the side flue by H<sup>1</sup>, the rear diving-flue by H<sup>2</sup>, the central return-flue by H<sup>3</sup>, the front diving-flue by H<sup>4</sup>, and the base-flue by H<sup>5</sup>. The four openings at Y Y<sup>1</sup> Y<sup>2</sup> Y<sup>3</sup> are for the purpose of obtaining access to the interior of the stove to clean it. The doors S T U V admit of ornamental work, according to the taste or wish of the manufacturer. The door of the fire-pot at W may have mica panels, either plain or colored. At X X are dampers, which may be used to regulate the admission of air into the fire-pot; these are shown in Fig. 1. A, in all the figures, indicates the sides of the stove. Z is the top, and B the base, of the stove. Q is the faucet, and R the lid of the reservoir.

The essential features of my invention, and which I claim to be new, are described as follows: A water-reservoir, P, placed in an interior position, as shown in Figs. 1 and 3. This reservoir is made of copper or iron, or any metal suitable for such purpose, and is so constructed as to be drawn out at pleasure, and, if necessary, cleaned or repaired, and then replaced. Space is gained for this reservoir between the fire-pot C and the side of the stove by placing the entrance for pipe at corner O, and by constructing the adjacent parts so as to save sufficient space therefor without changing the rectangular form of the stove. This

position for the reservoir is believed to be decidedly advantageous in respect to better access of the heat thereto, and the awkward and inconvenient shape of the stove produced by any exterior position of the water-reservoir is thereby saved.

My invention consists, further, in a new and simple system of flues and dampers, so planned as to better utilize the heat than in stoves now in use. The arrows in Figs. 2 and 3 show the direction which the current of heat takes through the flues when both dampers are open. Damper I opens and closes, as required, both the end and side flue around the upper oven F by the use of the same rod, and when the end flue is closed by this rod the side flue is open, and vice versa. This effect is accomplished by separating the top flue H from the side flue H<sup>1</sup> by a fixed partition of thin iron, except immediately at the stove-pipe O, and directly opposite the rear diving-flue H<sup>2</sup>. At that point an opening is left, which is controlled by the damper. This damper moves like a trap-door upon a hinge, or perhaps more like a cover of a box, and is opened and shut by a simple device, to wit: The damper attached to the rod I, closing and opening the rear diving-flue H<sup>2</sup>, (when open and thrown up,) impinges or presses against the side damper and holds it shut. When it is thrown down by the rod, and thus the pressure is removed from the side damper, that damper falls down, opening the flue under the stove-pipe. When the end damper is again thrown up by the movement of the rod, thus opening the rear diving-flue, the side damper is carried up with it, and thus shut, closing the side flue. Upon opening the end flue by means of damper I, and closing damper K, the heat circulates, and is retained about the upper oven F, thus producing a quick oven. If it be desired to distribute a portion of the heat under oven G as well, then let damper K be opened, and the current will pass through and circulate under and around that oven, and will reach the side flue through the opening N, (shown in Figs. 2, 3, and 4,) being somewhat retarded in its course by the deflector L. This is a narrow ridge of sheet-iron lying on the bottom of the stove, immediately under the lower oven G, and ex-



tending from the partition which separates the side flue from the base-flue, under that oven, for about two-thirds of the distance, obliquely across to the opposite side of the stove, as shown in Fig. 4. It begins at that partition just anterior to the opening N. This deflector is used for the purpose of retarding and keeping the heat under oven G, when it would otherwise pass directly to the opening N and into side flue, not heating the bottom of the oven lying out of its direct path. Through the side flue the current of heat reaches the under part of the reservoir P, and as the pipe opens into this flue escape therein for the smoke and thrown-off gases is obtained, whenever these are prevented by the closure of the pipe-damper from escaping into the pipe before making the circuit of the stove.

As will be seen, by this simple arrangement of flues and dampers the current of heat may be prevented from escaping immediately from the top of the stove into the pipe, and distributed so as to heat one oven or both ovens, and at the same time the reservoir and final escape, as before described, is provided for the current of heat mingled with the smoke and thrown-off gases of the fuel; and, again, by closing the rear diving-flue, and by the same movement of the rod opening the damper into the side flue, a quick draft is obtained for starting the fire. I also assist the draft by building the top of the oven F so that it inclines a little upward (say, about two inches in twenty-four) from the fire-pot, instead of being parallel with the top of the stove. The draft thus rises a little as it moves back, and is thus perceptibly increased.

The principal advantages which I claim for

my combined stove and reservoir are the following: first, great compactness of structure and shape; second, the utilization of all the heat by my system of flues and dampers, combined with the deflector L; third, by placing the opening for pipe at corner of stove O, instead of at the side, space is given for the reservoir, and the current of hot air is led back under the two top holes farthest removed from the fire-pot, making them nearly as useful for cooking purposes as the other top holes, while in ordinary stoves or ranges of this shape, with six top holes, these two are almost useless on account of the small amount of heat which reaches them; fourth, a quick draft when needed, and complete distribution of all the heat to the parts requiring it without waste or complicated arrangement.

I claim as my invention and desire to secure by Letters Patent—

1. The combination of the reservoir P, placed in the interior position shown, with the stove-pipe O, the side flue H<sup>1</sup>, and opening N, between the base-flue H<sup>5</sup> and side flue H<sup>1</sup>, substantially as described, and for the purposes set forth.

2. The flues H H<sup>1</sup> H<sup>2</sup> H<sup>3</sup> H<sup>4</sup> H<sup>5</sup>, combined with the dampers I and K, the inclined top of the upper oven F, and the deflector L, substantially as described, and for the purposes set forth.

Witness my hand this 6th day of July, A. D. 1875.

ANTON BICKEL.

In presence of—

F. M. HOUTS,  
FRANKLIN LUFISKY.