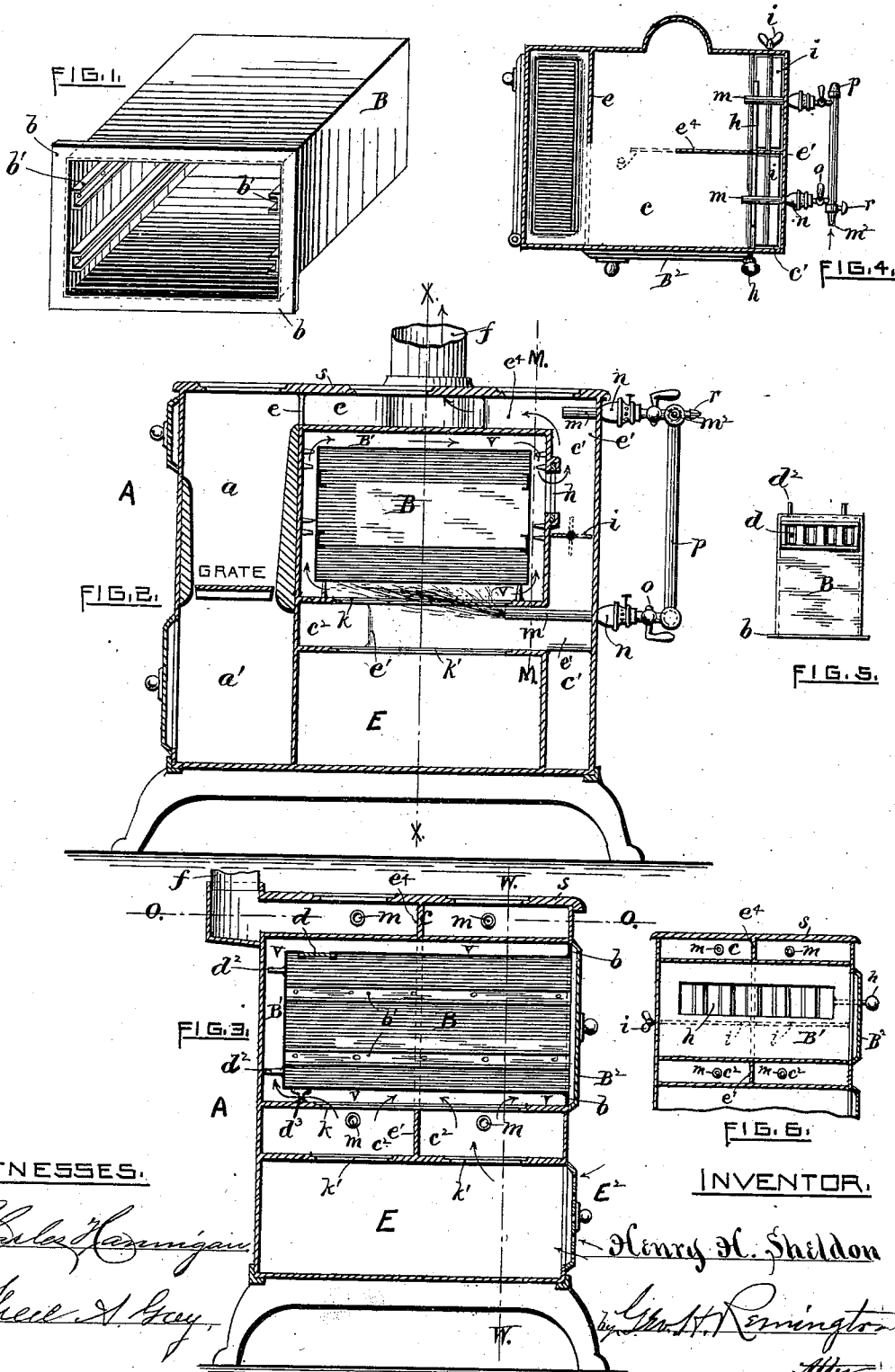


2 Sheets—Sheet 1.

REMOVABLE OVEN FOR COMBINED COAL AND GAS BURNING STOVES.

Patented Feb. 10, 1885.



(No Model.)

2 Sheets—Sheet 2.

H. H. SHELDON.

REMOVABLE OVEN FOR COMBINED COAL AND GAS BURNING STOVES.

No. 312,172.

Patented Feb. 10, 1885.

Fig. 7.

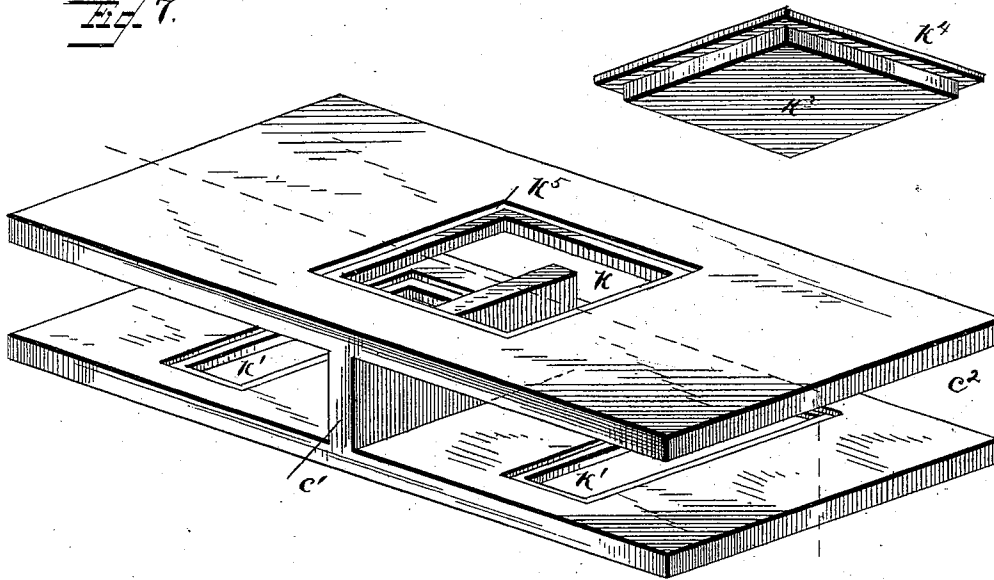
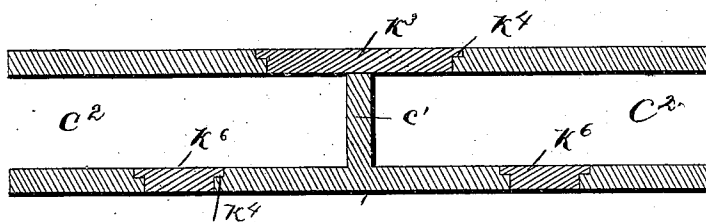


Fig. 8.



WITNESSES

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REMOVABLE OVEN FOR COMBINED COAL AND GAS BURNING STOVES.

SPECIFICATION forming part of Letters Patent No. 312,172, dated February 10, 1885.

Application filed November 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. SHELDON, a citizen of the United States, residing at Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Removable Ovens for Combined Coal and Gas Burning Stoves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My present invention relates to stoves or ranges adapted to be used for culinary purposes; and it consists, essentially, of a removable oven adapted to be secured within the baking or roasting oven of a coal-burning stove, in combination with suitably-arranged gas-burners, flues, and dampers, whereby said coal-stove oven is converted into an oven adapted to be heated by gas introduced through the walls of the stove.

Gas-burning stoves adapted to fully meet the requirements of hotel or family needs are necessarily very expensive in first cost, beside the additional room occupied by them.

By means of my invention coal-burning stoves can be readily converted into gas-burning stoves with comparatively slight expense, such improved stoves at the same time possessing all the culinary advantages of the former class.

It is not, broadly, new to introduce gas into a stove adapted for burning coal and wood; but such attempts have been attended with partial or complete failure when the gas has been used for heating ovens, owing, partly, to the fact that the intense heat soon warps and cracks the thin iron plates covering the bottom of the oven. The arrangement of the draft-flues also prevents the top of such ovens becoming sufficiently heated.

The object of this invention is to convert and adapt the ordinary type of coal-burning stoves into gas-burning stoves by slightly changing the construction of the oven-base, together with the addition of one or more dampers. A sheet-metal oven is then inserted into the stove-oven flush with its face,

leaving a space for the circulation of the heated air between the walls of said ovens. A projecting flange secured to the inner oven, however, serves to close the air-space all around in front.

In the accompanying sheet of drawings, Figure 1 represents a perspective view of the sheet-metal oven, having a projecting flange at its front end, all as adapted to be inserted within the oven of a coal-burning stove. Fig. 2 is a vertical longitudinal section on line *ww* of Fig. 3, showing the removable ovens, burners, and dampers in position as in use when heated by gas introduced through the walls of the stove. Fig. 3 is a vertical transverse section of the same on line *xx* of Fig. 2. Fig. 4 is a reduced horizontal sectional view taken through the top flue of the stove on line *oo* of Fig. 3. Fig. 5 is a reduced plan view of the removable sheet-metal oven as provided with a damper for ventilating the same; and Fig. 6 is a transverse reduced sectional view on line *mm* of Fig. 2, showing a damper formed in the side wall of the main oven of the stove adapted to allow the waste products of combustion from the burning gas to escape into the main flue and thence to the chimney. Fig. 7 represents a perspective view of the base plate of the oven and the base-plate of the bottom horizontal flue. This view also shows a central transverse flue-partition, and the lid or plate for covering the opening in the base-plate when the stove is to be used for coal. Fig. 8 is a section on the line *yy* of Fig. 7. In said Fig. 8 the lids are shown covering the openings *k k*.

The following is a description of this invention and its method of operation.

A, again referring to the drawings, designates a coal-burning stove or range complete as provided with the removable oven, together with suitable burners and dampers, thus adapting the stove to be heated by hydrocarbon gas and used for culinary purposes.

a designates the fire-pot, and *a'* the ash-pan.

B represents the oven, and *E* the sub-oven, or "hot-closet," as common to most styles of coal-burning stoves.

c represents a partition dividing the rear and bottom flues, *c'* *c'*, longitudinally, as fully shown.

c designates the upper flue above the oven *B'*, having a partition, *e*, therein, and also having a partition or damper, *e'*, forming a continuation of said partition *e'*.

5 Now, in order to adapt the foregoing-described stove into a gas-burning stove, I place a damper, *i*, in the rear flue, *c'*, thus dividing said flue into upper and lower chambers. A damper or register, *h*, opening into the oven
10 *B'*, is formed in one of its top or side walls, as most convenient. An opening, *k*, is formed in the base-plate of the oven, adapted to be closed by a closely-fitting plate or lid, *k'*. Said lid is provided with a flange, *k''*, that fits
15 into the rectangular recess *k'''* in the base-plate. One or more openings, *k''''*, are formed in the base of the flue *c'*, opening into the oven *B*. The latter openings are also adapted to be closed by lids *k'''''*. Said lids are provided with
20 flanges similar to the flange on lid *k''*.

B designates the portable sheet-metal oven, having slides *b'* therein, and, further, having an exterior flange, *b*, extending around the front edge of the oven, as shown in Fig.

25 1. The oven is also provided with stops *d'* at its rear end, together with suitable bottom supports, *d''*. (See Fig. 3.) The flange *b* is adapted to just fill the mouth of the oven *B'*, and to be flush therewith when the inner oven is inserted within the former one, thereby
30 adapting the door *B''* to be closed. Said flange and stops serve to form an air-space, *v*, around the exterior of the inner oven, as fully shown.

n m designate an ordinary type of atmospheric burners inserted through the rear wall of the stove into the top flue, *c*, and back flue, *c'*, said burners being provided with stop-cocks
35 *o* and connecting gas-pipes *p*. The burners and connections may be permanently attached to the stove, if desired.

The operation of a stove provided with my improvements may be described as follows: The flue *c'* is first closed or divided by means of the damper *i*. The damper *h* of the oven *B'*,
45 above the damper *i*, is then partially or fully opened, as may be required. The oven *B* is now inserted and the door *B''* closed, followed by turning on and igniting the gas flowing from the lower burners of the flue *c'*, the
50 heat therefrom passing into and filling the space *v* around the oven *B*, (see arrow direction,) from whence it issues into the flues *c'* and *c* through the opening which is regulated by the damper *h*, thence escaping into
55 the chimney. Additional air for the burning gas is supplied through the lower openings, *k' k''*.

The burners are adapted to be connected with the gas-supply by means of a flexible or
60 other tubing, as common. The oven *B* is thus quickly and uniformly heated. In fact, it will bake better than an oven heated by burning coal, as the temperature can be regulated to a nicety.

65 The oven *B* is adapted to be used as a broil-

ing-chamber also. In the latter event, however, a damper, *d*, Fig. 5, should be opened for the purpose of ventilating the oven.

After use the stove *A* is readily adapted again for coal-burning by simply removing
70 the oven and closing the openings *k k'* and the damper *h*, the flue-damper *i* at the same time being opened. Said openings are closed by the lids *k'' k'''*.

It is obvious that the burners *m* may be introduced at the back or even at the front of
75 the stove without departing from the spirit of the invention. The burners also may be permanently connected with the stove. In such case, however, a cap is to be placed over the
80 ends of the burners to prevent the entrance of ashes, &c.

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

1. The combination, with the baking-oven
85 of a fuel-burning stove, of the removable metal oven herein described within the same, and gas-burners for heating said oven, and a supply-pipe therefor introduced through the
90 walls of the stove, substantially as shown, and for the purpose set forth.

2. In a fuel-burning stove having one or more ovens, the damper *h*, opening *k*, the bottom flue, *c''*, rear flue, *c'*, and upper flue, *c*,
95 the combination therewith of the damper *i*, located in the rear flue, substantially as described, and for the purposes set forth.

3. In a fuel-burning stove having one or more ovens, the bottom flue, *c''*, rear flue, *c'*,
100 and upper flue, *c*, and damper *i*, the combination therewith of the register or damper *h*, opening into the stove-oven *B'*, above the damper *i*, substantially as shown, and for the purpose set forth.

4. In a fuel-burning stove having one or more ovens provided with the top, rear, and bottom flues, *c c' c''*, and dampers *h i* herein described, and further provided with one or
105 more apertures, *k k'*, opening into said oven and flues, the combination therewith of the oven *B*, detachably secured within the oven *B'*, an air-space, *v*, around the exterior of the inner oven, whereby the latter is adapted to be heated
110 by means of gas introduced through the walls of the stove, the whole arranged and adapted for use substantially as shown and set forth.

5. The sheet-metal oven *B* herein described, having the front exterior flange, *b*, and a ventilating-damper, in combination with a stove-oven and means for supporting said sheet-metal oven in the stove-oven, substantially as
115 shown and set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

HENRY H. SHELDON.

Witnesses:

CHARLES HANNIGAN,
GEO. H. REMINGTON.