2 Sheets—Sheet 1.

M. C. HULL.

Cooking Range.

No. 68,366. Patented Sept. 3, 1867.

Fig. 2.

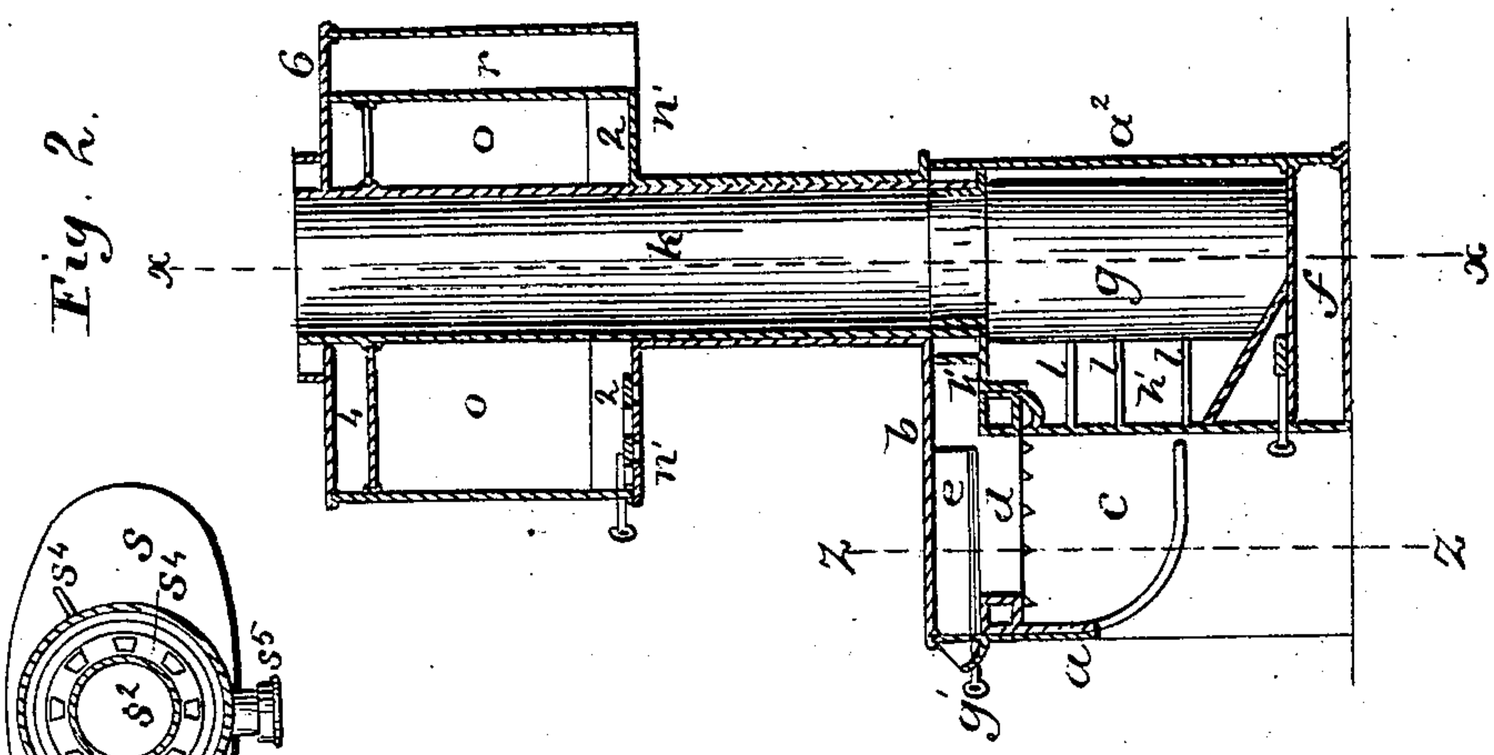
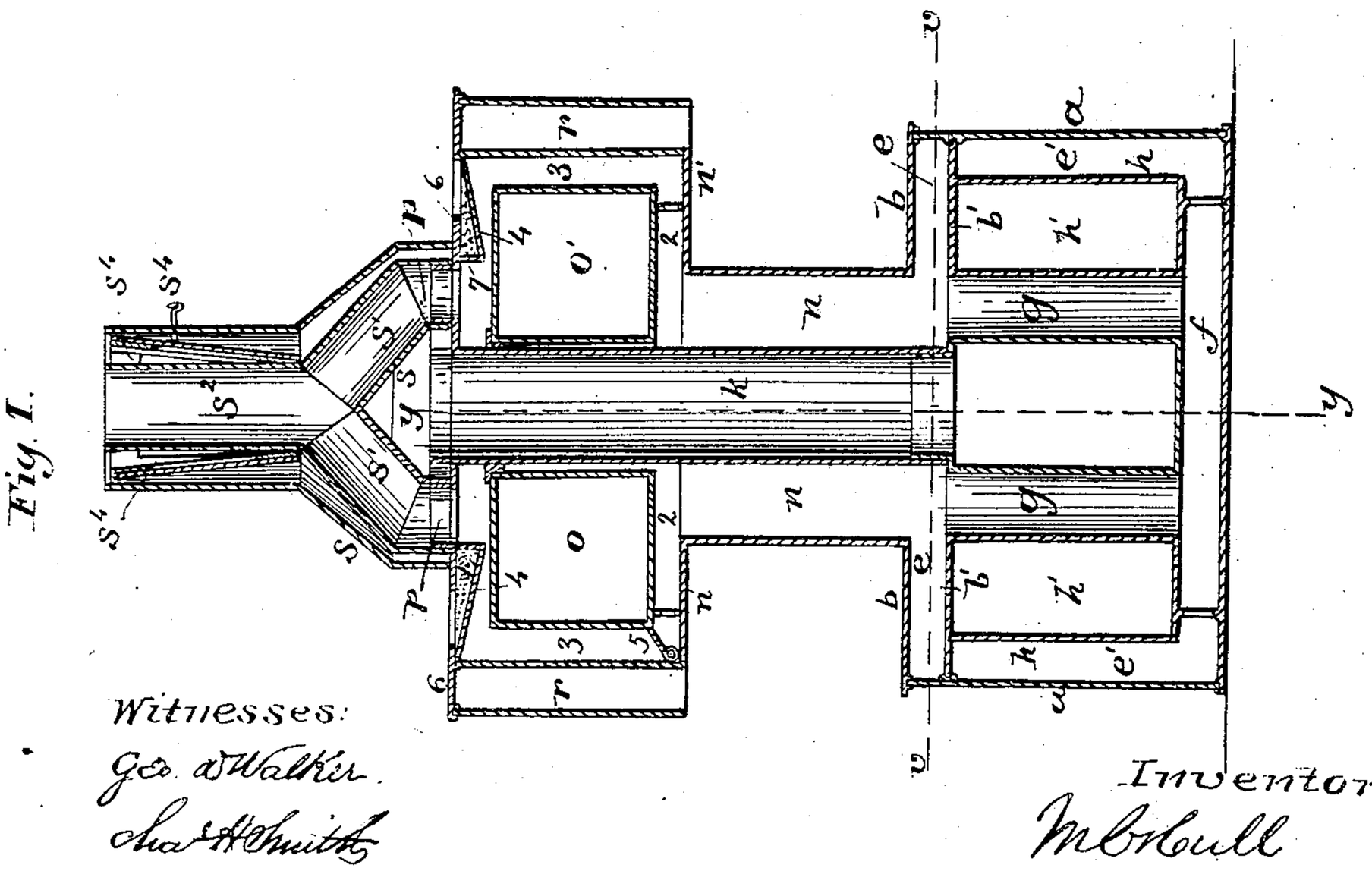


Fig. 6.

Fig. 1.



Witnesses:
Geo. W. Walker.
Chas. H. Smith

Inventor:
M. C. Hull

2 Sheets—Sheet 2.

M. C. HULL.

Cooking Range.

No. 68,366. Patented Sept. 3, 1867.

Fig. 3.

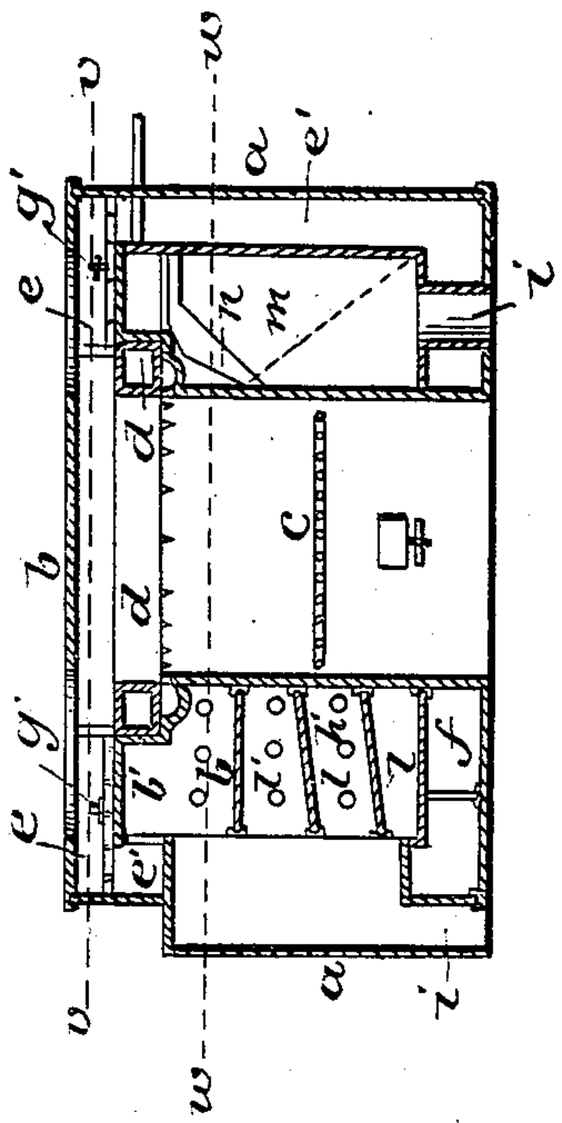
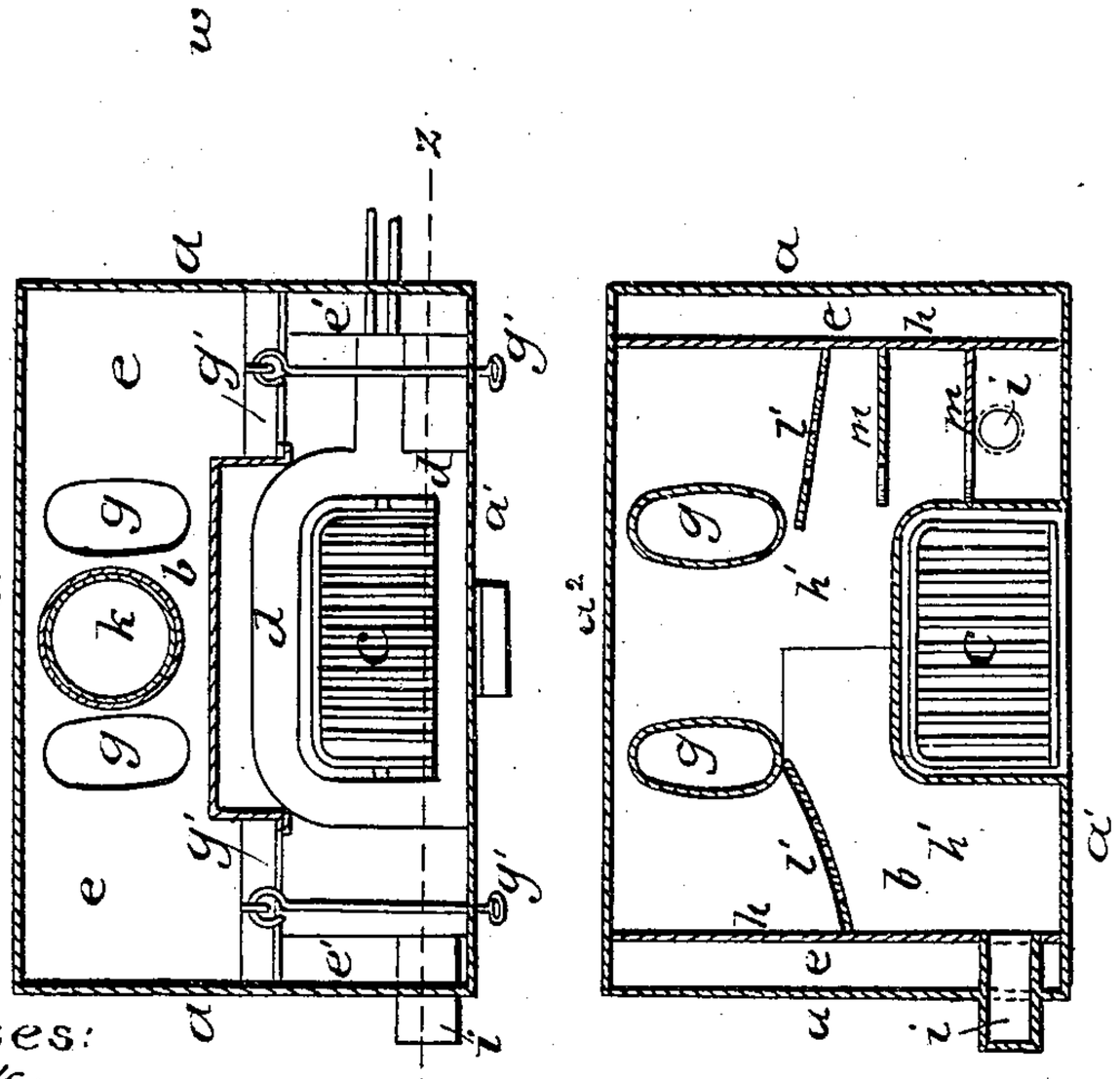


Fig. 4.



Witnesses:
Geo. Walker.
Chas. W. Smith

Inventor:
M. C. Hull.

United States Patent Office.

MAURICE C. HULL, OF NEW YORK, N. Y.

Letters Patent No. 68,366, *dated September* 3, 1867.

COOKING-RANGE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, MAURICE C. HULL, of the city and State of New York, have invented, made, and applied to use a certain new and useful improvement in Cooking-Ranges; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a vertical section longitudinally of the range at the line *x x* of.

Figure 2, which is a vertical section transversely of the range at the line *y y*.

Figure 3 is a vertical section of the body of the range at the line *z z*.

Figure 4 is a sectional plan at the line *v v*.

Figure 5 is a sectional plan at the line *w w*, and

Figure 6 is a sectional plan of the smoke and air-flues above the register.

Similar marks of reference denote the same parts.

My invention relates to that class of ranges in which the surplus heat may be used for heating rooms above the range, and in which the ovens are elevated above the main or body part of the range. Some features of my said invention may, however, be employed in ranges or stoves that do not have elevated ovens.

The nature of my said invention consists in a range having an elevated oven, the fire being in the lower part, and the products of combustion passing through descending flues so as to facilitate the heating of articles that may be placed directly upon the top of the range, and also effecting a great saving of fuel. The products of combustion are directed upon the elevated oven, and means are provided for preventing the elevated ovens becoming chilled. And I provide a peculiar air-heating space that heats a current of air passing through the lower part of the range to a room above. This last feature may be employed in ranges or stoves that do not have an elevated oven.

In the drawing, *a a* are the side plates, a^1 the front plate, a^2 the back plate, and *b* the top plate of the body or lower part of the range. This top plate is provided with holes for the reception of pots as usual. *c* is the fire-pot and grate, and *d* is the water-back, of any desired character. *b′* is the top flue plate; *e* the flue. *e′ e′* are descending flues to the bottom flue *f*, and the products of combustion pass away, by the ascending flues *g*, to the flue *n*. Dampers *g′* are provided in the flue *e*, and when open allow a direct draught to the flue *n* in kindling or when the elevated ovens are in use. By providing the descending flues *e′* a plenum of heat is maintained beneath the top plate of the range, which insures greater efficiency in heating said plate and effecting cooking thereon than in the elevated oven ranges heretofore constructed without descending flues, and at the same time a saving of fuel is effected, as the heat does not pass off so directly to the chimney. Between the descending flue plate *h* and the fire-pot is an air-heating chamber *h′*, into which air is admitted and becomes heated by contact with the fire-pot, and ash-pit and by the heat in the flues *e e′* and *g g*, and the air passes off by the rising-air pipe *k*. The air may be admitted towards the front of the air-chamber *h′* through the pipes *i i*, and I have shown horizontal divisions *l l* to direct the air into contact with the fire-pot and ash-pit in its passage through the chamber, or vertical plates *m m* may be employed for the same purpose, the air passing over one and below the next, and thereby being detained and deflected into contact with the fire-pot. I also make use of vertical plates *l′*, (see fig. 5,) to cause the air to circulate in contact with the back of the fire-pot before passing away by the pipe *k*. These plates may be perforated to allow some of the air to pass into the air-space behind them and in contact with the flues *g*. The smoke flue *n* is on one or more sides of the rising-air pipe *k*, and opens into the casing *n′* of the elevated ovens *o o′*. I prefer that this casing *n′* be made of cast-iron plates, and the ovens *o o′* of wrought-iron sheets. The products of combustion circulate around the ovens *o o′*, through the flues 2 2, 3 3, and 4 4, and go away by suitable pipes at *p*. I make use of a damper at 5 when it is desired to have all the heat pass under one oven. The top plate 6 over the flues 4 is made double so as to have a space, 7, into which plaster, ashes, or other non-conducting material may be introduced to prevent the loss of heat by radiation from the top plate over the oven, and I prefer that this plate be deflected downwards, as seen in fig. 1, so as to cause the heat to impinge upon the top of the ovens, and increase their efficiency. The space between the lower edge of the deflecting plate and the top of the oven may be greater at the front than at the back of the oven, so as to equalize the action of the heat on the oven. Around the oven-flues 3 3, I form an air-space,

r, by metal plates hanging from the top plate 6, or by extending said top plate to the surrounding brick-work; this retains the heat that rises from the top of the range, and insures greater efficiency in the ovens by preventing radiation from the flues surrounding them. The air-space *r* may also extend around the back of the ovens, as seen in fig. 2. By extending the pipe *k* to the bottom flue *f*, and connecting the pipes *n* with the air-chamber *h'*, the heated air might pass around the smoke flue instead of through the same, and the air-heating space around the fire-pot, and also the flues *k* and *n n*, fitted as set forth, may be employed in a range or stove having ovens in the body of the range, instead of being elevated. The air from the pipe *k* passes into the case *s*, and within this case the two smoke flues s^1 unite into one pipe, s^2, that extends up through the hot-air pipe, and thence is conveyed in any desired manner to a chimney, and the hot air is conducted to the room. In order to close the hot-air pipe in summer time, and prevent the heat passing to the rooms, I employ a double conical register, s^4, formed with alternating openings in the respective truncated cones, which, having as much area in the aggregate as the section of the air pipe, form but little obstruction to the heated air, but when the register is closed by turning one cone upon the other, the heated air cannot pass. I provide a pipe at s^5 that may be opened to allow hot air to pass away when the register is closed.

What I claim, and desire to secure by Letters Patent, is—

1. In a range or stove provided with an elevated oven, I claim a descending flue in the lower portion of the range, for the purpose and substantially as set forth.

2. I claim the arrangement of the air pipe *k*, smoke flue *n*, and elevated ovens *o o'*, in combination with a range or stove having a descending flue, substantially as and for the purposes set forth.

3. I claim a conical register introduced in the hot-air flue around the smoke flue, in the manner and for the purposes specified.

4. I claim forming a chamber for non-conducting material above the top oven flue, for the purposes and as set forth.

5. I claim inclining the upper plate of the top oven flue so as to deflect the products of combustion down upon the top of the open, as set forth.

6. I claim the air-flue *k* within the smoke flue *n*, in combination with an air-heating range or stove, substantially as set forth.

In witness whereof I have hereunto set my signature this eighteenth day of March, A. D. 1867.

M. C. HULL.

Witnesses:

CHAS. H. SMITH,

GEO. D. WALKER.