G. NORTH.

Cooking Stove.

No. 22,147. Patented Nov. 23, 1858.

Fig. 1

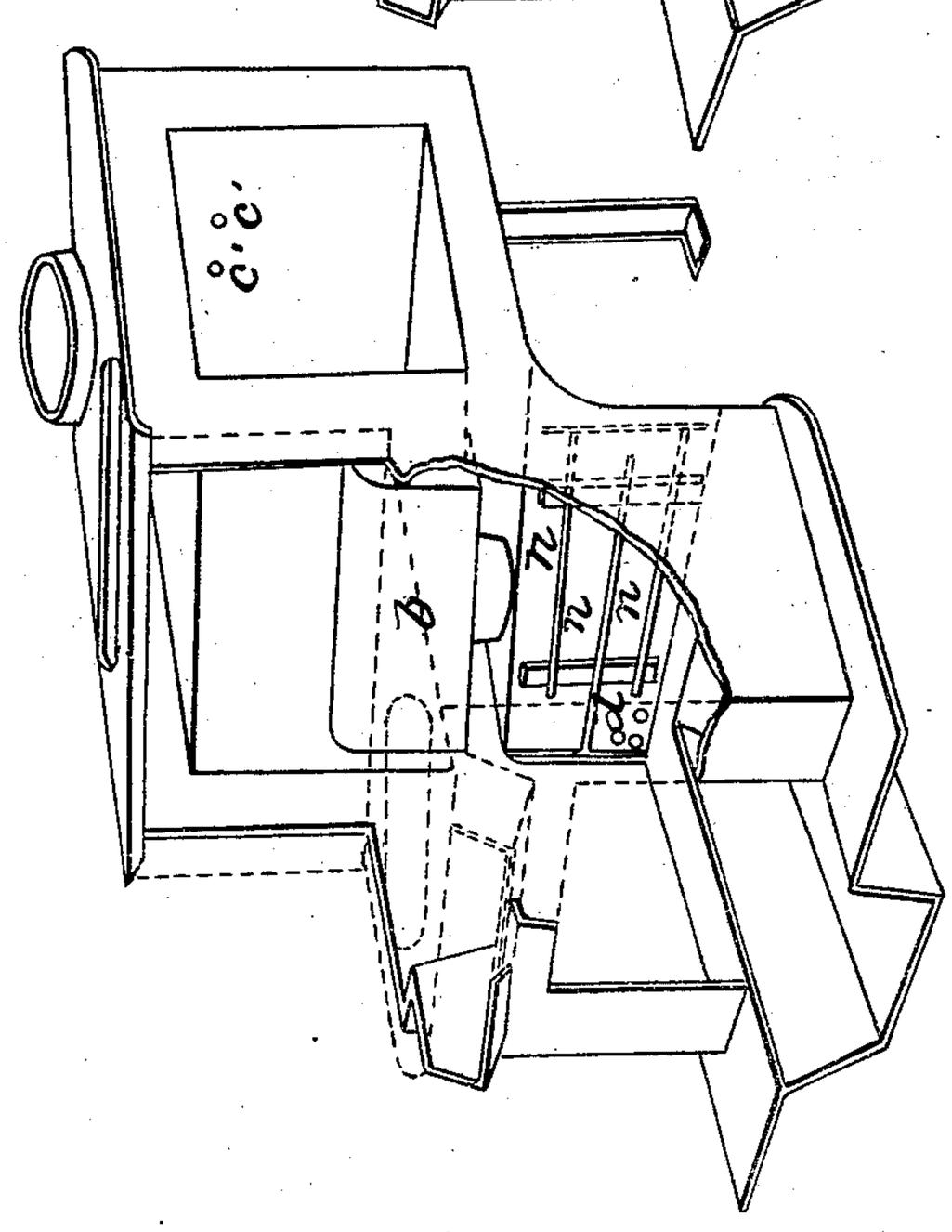


Fig. 2

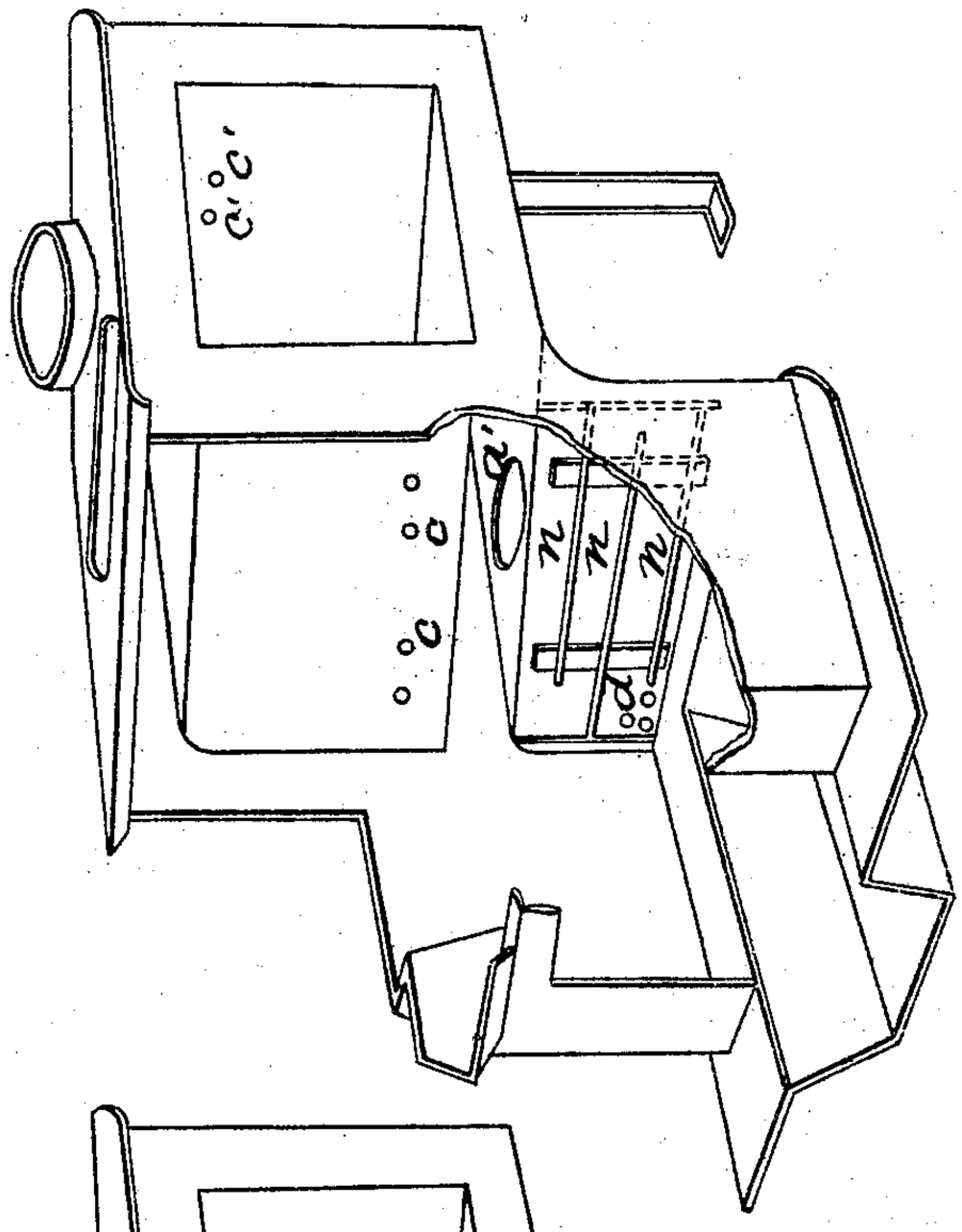


Fig. 3

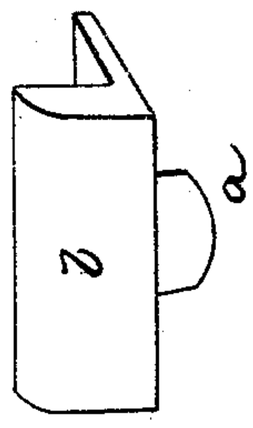
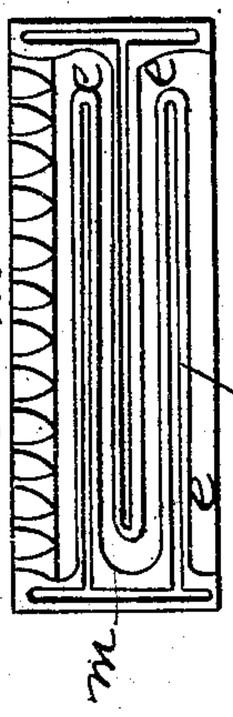


Fig. 4



UNITED STATES PATENT OFFICE.

GIBSON NORTH, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO NORTH, CHASE AND NORTH, OF SAME PLACE.

COOKING-STOVE.

Specification of Letters Patent No. 22,147, dated November 23, 1858.

To all whom it may concern:

Be it known that I, GIBSON NORTH, of the city and county of Philadelphia and State of Pennsylvania, have invented certain new Improvements in Cooking-Stoves; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Figure 1, represents a perspective view of the essential parts of a stove, with the shield plate *b*, in its place. The red lines represent the parts removed. Fig. 2, represents the same view, with the shield plate removed. Figs. 3 and 4, represent the shield plate, detached from the stove. Fig. 5, represents on an enlarged scale, a channeled air chamber for the back of the fire box.

I construct my stove in any of the usual forms, but the form known as "The Complete" cooking stove, is especially adapted to my several improvements.

In order to secure a more perfect consumption of the gaseous products of combustion and a consequent saving of fuel, I make the adjustable back lining of my fire box (Fig. 5) with a channeled zig-zag groove *e*, *e*, which forms, with the back plate of the same, a circulating air-chamber, in which fresh air is continually heated and allowed to mix with the escaping gases, at the apertures *i*, *i*.

In order to make the chamber as tight as possible, furnishing a continuous and perfect channel for the air to pass up and to secure a thorough heating of the air before it is admitted into the draft of the stove, I make use of the supplementary grooves *m*, *m*, which may be fitted to projections *n*, *n*, on the adjoining plate and rendered air-tight by cement.

At *d* are apertures for admitting air into the heating chamber *e*, *e*.

The fresh supply of oxygen in the air which is heated in the chamber *e*, *e*, ignites the combustible gases at the aperture *i*, *i*, thus producing the desired amount of heat with a less consumption of fuel than would be required if the gases were allowed to escape unconsumed. I think fire-brick is the most suitable material for the adjustable back of the fire chamber, which forms with the back plate of the stove, the hot air-chamber *e*, *e*.

In the old Complete cooking stove the front lower corner of the oven became intensely heated, and in a short time the plates would often burn entirely through. To equalize the heat of the oven, and increase the durability of the stove, I place a guard plate *b*, to screen the oven from the intense heat. I extend this plate for some distance upward, in front of the oven, and backward underneath the oven, so as to form a cold air chamber, into which a constant current of cold air is admitted at the opening *a*, for the preservation of the plate and for cooling the hottest part of the oven. The air thus admitted becomes heated to a temperature sufficient for baking, and I introduce it into the oven by the apertures *c*, *c*, giving it an exit from the oven, by the apertures *c′ c′*, opening into the smoke flue. I thus secure an efficient and valuable ventilation for the oven, as well as keeping up the circulation of cold air through the shield or guard plate, equalizing the temperature of the oven, and protecting the oven plates.

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

The arrangement of the grooved back of the fire-chamber, the cold air chamber in the flue and the guard plate at the corner of the oven, substantially as described and for the purposes specified.

GIBSON NORTH.

Witnesses:

C. BRAZER,

K. KAHMAR.