E. SMITH.

Cooking Stove.

No. 1,281.

Patented Aug. 9, 1839.

Fig. 4.

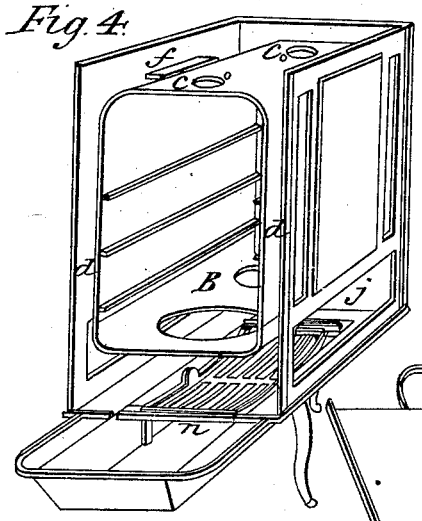


Fig. 1.

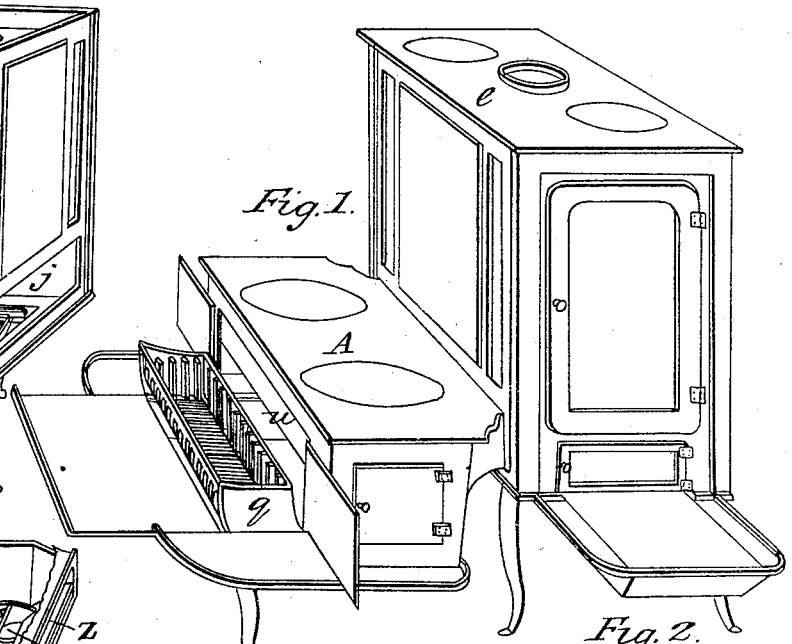


Fig. 3.

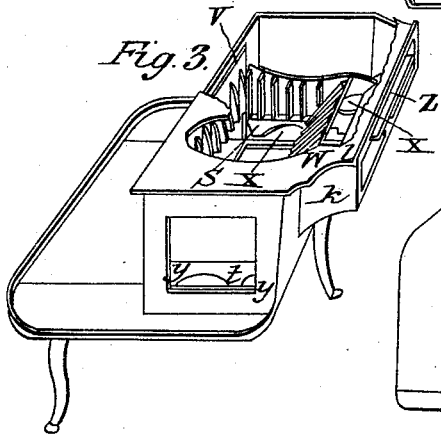


Fig. 5.

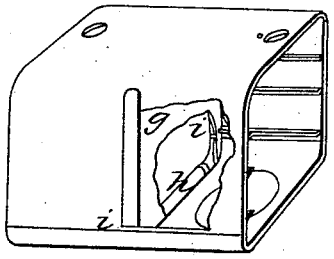


Fig. 2.

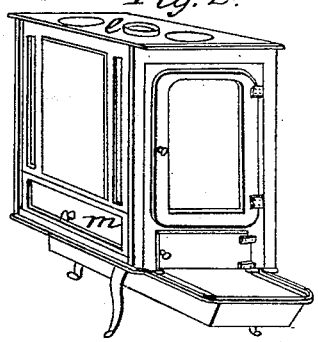


Fig. 7.

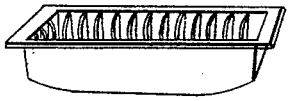
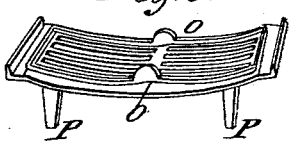


Fig. 6.



UNITED STATES PATENT OFFICE.

ELIHU SMITH, OF TROY, NEW YORK.

COOKING-STOVE.

Specification of Letters Patent No. 1,281, dated August 9, 1839.

To all whom it may concern:

Be it known that I, ELIHU SMITH, of the city of Troy, in the county of Rensselaer and State of New York, have invented a new and useful Improvement in Stoves for Cooking and Baking and also in Grates for Stoves; and I do hereby declare that the following is a full and exact description, reference being had to the annexed drawings, making a part of this specification.

My stove here to be described consists of two parts so constructed as to be used together or separately.

Figure 1 is a perspective view of the two parts united. Each of them is supplied with a fire place, grate, sunk-hearth and sliding damper, as necessary provisions for thus being used in connection or apart. Yet as that shown at A contains the fire place generally used for both when united and is provided with boiler openings immediately over it. I distinguish it from the other for purposes of description as the boiling or fire apartment. The other which contains the oven with provisions for various modes of cooking as well as baking and being calculated to require less fuel and gives out less heat in proportion to what is used than the two together I call the cooking or summer apartment. And from this general character of the stove and indicating the place of its origin I have denominated it the Troy union cook stove.

Figs. 2 and 3 represent the two parts disconnected—the latter with part of its top plate off to show certain appendages of its grate hereafter to be described.

Fig. 4 represents the cooking apartment with front and top plates off—showing its internal construction and some of its appendages. B is the oven with boiler openings in the bottom and cleats at the sides for shelves or racks on which articles are placed for being baked or cooked. *c*, *c*, an opening, in the top for the escape of steam, &c., closed and regulated by dampers attached to the underside of the top of the oven as in common cases for like purposes. *d*, *d*, are vertical flues one on each side for the passage of the fire and heated air. The opening for the stove pipe being in the center of the top plate of the stove as seen at *e*, Figs. 1 and 2, I provide a flange from each side plate of this apartment extending inwardly across the flue near the top and in length to any discretionary extent (one of which is shown at *f*) in order to check and divide the draft of hot air and give it more of a distribution effect upon the oven than when passing in one current to the stove pipe. I usually make the bottom of the oven, and to the extent of two inches more or less up each side of cast iron, and the residue of sheet iron, uniting them together with rivets or in any other common mode of fastening. And when preferred I divide the oven into two parts by a double partition of sheet iron, as partially shown at *g*, Fig. 5. In this case I provide an opening as seen at *h* at the center of the bottom plate, extending nearly across it, as an inlet to the flue formed by the double partition; and I make it double for this purpose. It extends up to the top of the oven but not through the top, being left open from above the cast iron bottom plate to near the flange as above described, into the other vertical flues on each side as shown at *i*, *i*. The lower edge of each sheet iron partition is attached or bent under the corresponding edge of the opening in the bottom plate.

j, *j*, Fig. 4, are openings in the side plates, into either of which, according to the selection for that purpose, the projecting end of the flue from the fire apartment shown at *k*, Fig. 3, is introduced when used in connection with this apartment being fitted to each other for the purpose. The flue is provided with a small vertical flange from the outer edge of its top plate as shown at *l*, which by raising the outer part of the fire place is passed into the opening and when the fire place is let down again to its level the flange is brought up against the inside of the plate which forms the upper edge of the opening and serves as a catch to keep it in its place until the outer part is again raised for the purpose of being taken apart. In like manner I apply when required an apartment of this description to each side of the other at the same time. Each of these openings when not thus occupied is closed by a plate provided for it, as shown in its place at *m* Fig. 2.

n, Fig. 4, represents a grate which I use in this cooking apartment. Fig. 6 is a sepa-

rate view of the same. As an appendage for enlarging its capacity for holding coal when occasion requires, I provide the additional sides and ends shown in Fig. 7 cast entire without a bottom as one article ribbed on the inside in the manner usual for such purposes. Its lower edge is fitted to the upper surface of the rim of the grate so as to fit snugly either within or without the flange raised from the rim of the grate as shown at *o*, *o*, for the purpose of keeping it in place and closed around the edge. *p*, *p*, are its legs made to stand upon the bottom of the sink of the hearth so as to be movable thereupon out or in to the extent of its length—the height of the whole being such as not to interfere with the bottom of the oven.

The grate of the fire apartment is represented at *q*, Fig. 1. This in height I make equal to about half that of the door and otherwise in form and dimensions adapt it to the fire place in which it is used making allowance for the other provisions here described in connection. It is supported by its end plates resting upon the shoulders at the upper edges of the sink of the hearth which are made like those in common use for sliding dampers. These extend the whole length of the sink from front to rear. The end plates of this grate serving as slides thereupon by means of which it is also made movable out and in at pleasure. The appendages of this grate within the fire place as mentioned in the reference first made as above to this figure consist of four plates—two placed across and two extending in a lengthwise direction with the fire place (as partially shown in the figure) in such quadrangular position and relative distances apart as to correspond in form and dimensions with the sides and ends of the grate so that when it is shoved in under them—they, being at a suitable elevation for that purpose, serves as a continuation of the sides and end upward and thus constitute in connection with the grate a kind of reservoir of enlarged capacity for holding fuel. The width of these plates I fix at discretion having regard to the purposes intended to be attained by their application. The end plates are made to stand upon the bottom plates of the stove at a little distance from the margin of the sink—the lower part of each, from a level with the top of the grate being inclined a little outward as shown at *s*, *t*, so as not to interfere with the grate when passing in and out between them. On their outside they are supported in their upright position by means of points or flanges like those in common use for like purposes, from the front and back plates of the fire place, with which their respective ends come in contact. These plates, as shown in the figure, are ribbed on the inside and the ribs of the end plates as flanges are formed at discretion so as to answer as a rest and support for the respective ends of the other two. The front plate against the inside of the front plate of the fire place, as seen at *u* extends across the upper part of the doorway in Fig. 1, and on the inside at V, Fig. 3, the back plate W, Fig. 3, suspended at a distance from this about equal to the width of the grate so as to leave a space between it and the back plate of the fire place for the circulation of air. For like purposes—the circulation of air—passages are provided in connection with the end plates at X, X, and Y, Y. In order to favor the draft from the fire into the passage which leads from this into the other apartment an outward inclination, as shown in the drawing, is given to this suspended back plate. At the end of this passage a flange, as shown at Z, Fig. 3, is projected beyond it nearly across the entrance into the vertical flue of the other apartment, so as partially to close it for the purpose of conducting a part of the fire and heated air under the oven to the flue on the opposite side, the length of the flange being equal to about half the width of the communicating passage over which it projects.

The provisions above described for holding an increased quantity of coal in connection with the grate of each apartment I make so as to use or not as occasion requires—although, in addition to the purposes mentioned they are designed to serve as a protection to the plates of the fire place in which they are used against the effects of the fire as well as to guard against the excess whenever it is found expedient to do so of its heating influence upon the air of the room to which the process of cooking might sometimes subject it, when the unchecked action of the fire is upon the outside plates of the fire place.

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

1. The attaching to a stove a portable oven having a grate under it in which a separate fire may be made whenever necessary—to a cooking stove as herein described, so that both when combined shall form a cooking apparatus in which either fire place may be used as occasion requires—the whole combined, constructed and operating as herein specified, but I do not claim as my invention the adding of a portable oven merely to the stove, as this is not new, but my claim is the addition of a portable oven having a grate under it arranged in the manner and for the purposes set forth.

2. I also claim the movable compound grate as above described in connection with the cooking apartment of the stove, by means

of which the capacity of the grate for holding coal is enlarged and the plates of the fire place in a measure protected from the action of the fire.

3. I also claim the movable grate as above described in connection with what I have termed the fire apartment with the use as occasion requires of the plates as appendages thereof within the fire place in the manner and for the purposes above specified.

ELIHU SMITH.

Witnesses:

WALTER W. SEYMOUR,

JAS. NIEL.