2 Sheets—Sheet 1.

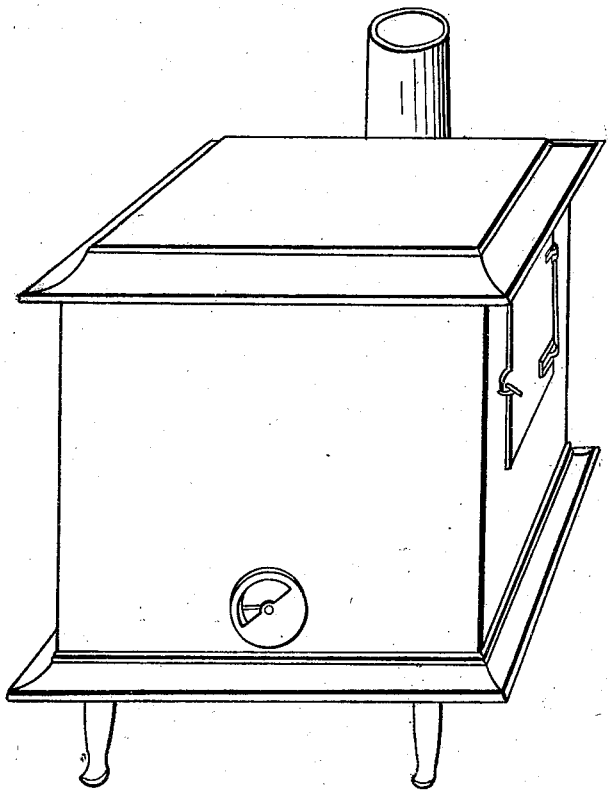
ROGERS & HANCOX.

Stove.

No. 4,811.

Patented Oct. 10, 1846.

Fig. 1.



2 Sheets—Sheet 2.

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Fig. 5

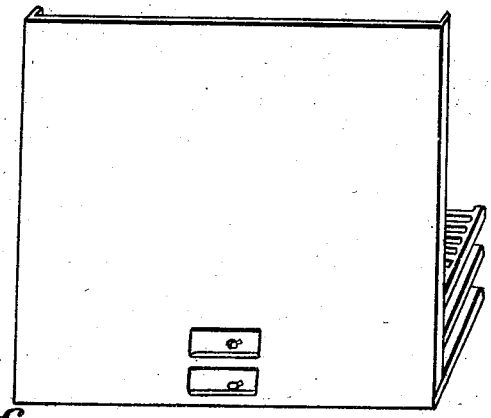


Fig. 2

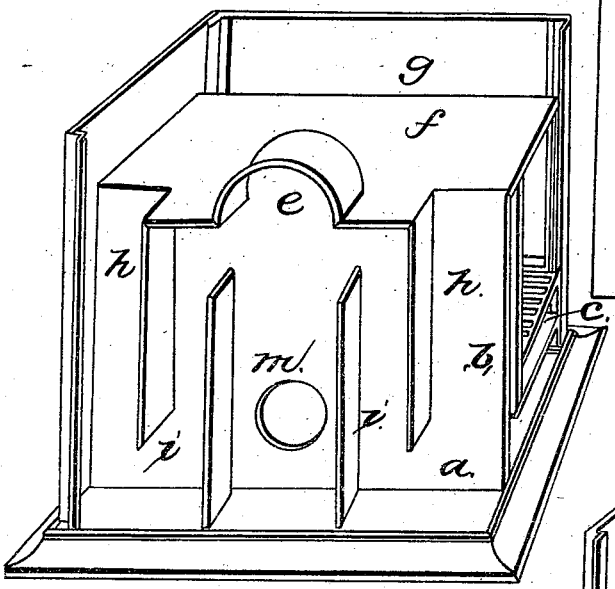


Fig. 4

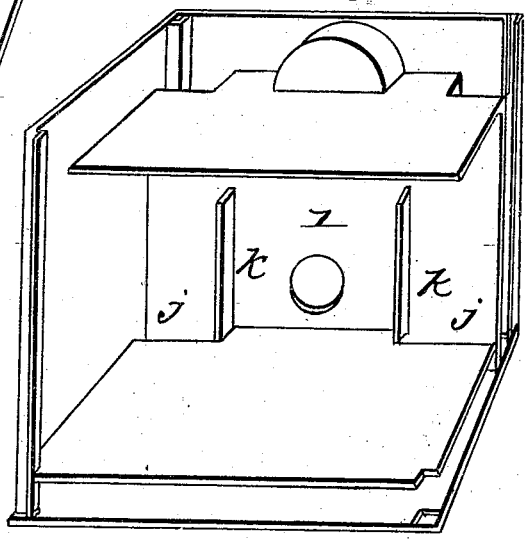
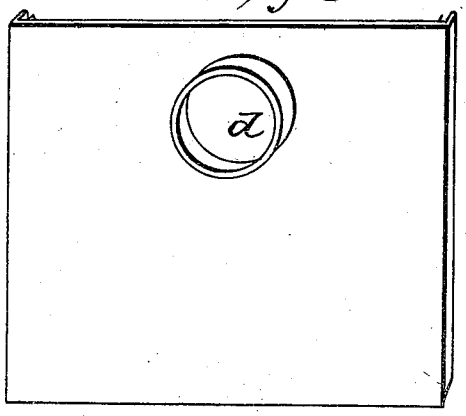


Fig. 3



UNITED STATES PATENT OFFICE.

CHARLES H. ROGERS AND SAMUEL H. HANCOX, OF TROY, NEW YORK.

STOVE.

Specification of Letters Patent No. 4.811, dated October 10, 1846.

To all whom it may concern:

Be it known that we, CHARLES H. ROGERS and SAMUEL H. HANCOX, of the city of Troy, in the county of Rensselaer and State of New York, have invented new and useful Improvements in Stoves; and we do hereby declare that the following is a full and exact description, reference being had to the annexed drawings, making part of this specification.

The improvements here to be described are in stoves designed for parlor use as distinguished from those intended for cooking purposes—and for wood as fuel—and are to be what are called air tight—with provisions for guarding against explosions, and prejudicial condensation of steam arising from combustion within them.

Figure 1, of the annexed drawings is a perspective front view of a stove of this description. Fig. 2 is a back view of the same with the top—the outer back plate and one of the end plates off—showing two inner back plates at *a* and *b*, and one inner bottom plate at *c*, the edge of which is also seen through the circular opening for the damper in Fig. 1. Fig. 3 is a view of the outer back plate which, when in place, brings the opening *d*, supplied with the collar, as there shown, for the stove pipe, directly opposite the cavity of the arch *e* Fig. 2.

In order to cause the fire and heated air to pass near the outer plates of the stove, the better to give out their heating influences, the horizontal plate *f* is provided—extending from the top of the plate *a* to within a distance of the front plate at *g* about equal or a little less than that between the same horizontal plate and the top plate of the stove, or so as to serve as the flue from the fire place to the back part of the stove when, at each corner, the flue is continued down the passages between the two back plates as shown at *h*, *h*, and then up those of *i*, *i*, to the stove pipe. By reference here to the semi circular damper in the front plate, Fig. 1, it will be seen that the center pin on which it turns is directly against the edge of the inner bottom plate—so that when the damper is down a passage for the draft of air to the flue is opened directly under the grate. When it is turned up this is closed and a passage opened into the space between the two bottom plates which serves as an air chamber, from which openings are provided through the upper of the two bottom plates, as shown at *j*, *j*, Fig. 4, for the air to pass from this chamber up into passages provided for that purpose between the two inner back plates, as seen in connection with and immediately above the openings. The passages continue up over the partition plates *k*, *k*, and down the middle passage *l* to and through the circular opening in the outer of the two inner back plates into the passage *m* on the opposite side of the same plate as shown in Fig. 2, leading directly to the stove pipe. It may be noticed here that at the top of this central passage *m* the divided draft through the flue passages from the fire place as above described unite in passing to the stove pipe—so that from thence outward the fire and heated air or whatever issues from the fire place through the flues as well as the current of hot air from the air chamber, whether separately or together, occupy the same passage. Now as the draft from the fire place ceases when that which leads to the fire and supports it is stopped—and as the same movement of the damper which stops it opens the passage and introduces a current of air into the chamber underneath to pass up as it becomes warmed and rarefied through these passages formed by the back plates of the fire place on one side and on the other by that which forms the inside of the flue passages from the fire will it is inferred acquire an ascending power sufficient to carry off with it whatever remains stagnant in the passage for want of draft from the fire or continues to issue therefrom in form of gas or steam, and thereby prevent all prejudicial condensation in the ulterior passage. So also by partially turning the damper, on in an oblique direction across the level of the inner bottom plate for the purpose of regulating the draft of air to the fire, the same result in this respect it is calculated will follow, as the air from the air-chamber will by such an operation be increased in quantity in proportion as that from the fire place is diminished, so as to keep up the same full draft in the outleading passage.

A separate damper of any common construction, adapted to our improvement may be applied to each passage—that is, for opening a passage for air to the fire or to the air chamber and for regulating the same and which we adopt or not at our option as a substitute for that we have above described, such for instance as represented in Fig. 5—

preferring however the former for its greater convenience and instantaneous effect.

From the above described provisions for keeping up a uniform and uninterrupted draft, and from the up and down arrangement of the flues—with the application thereto of the principle that, without a draft or being propelled, hot air will not descend nor cold air ascend, it is here assumed that the flue passages thus formed may be left open and explosions thereby prevented and yet all the beneficial effects of an air tight stove be retained. Such are the objects and purposes of the foregoing provisions relative to this part of our improvement.

At each corner of the stove we provide a tube or hollow space, extending from the top to the bottom plate and formed by means of an angular or curved termination of the joining plates with common flanges or otherwise as may be deemed expedient for locking them together. Those represented in the drawings, as will be seen, are rectangular. They are for the purpose of admitting through them the common rods for binding the plates of the stove together and of being then filled with cement or other suitable material for making the corner joints of the stove air tight.

What we claim and desire to secure by Letters Patent is—

The damper, so connected with the openings or passages for a draft of air to the fire and that which leads to the air chamber as by one operation to close in whole or in part the one and in corresponding proportion to open the other, in combination with the inside bottom plate and hot air chamber, and inside top plate therewith connected for preventing condensation of steam, and for preventing explosions, all as above specified and described.

CHAS. H. ROGERS
SAMUEL H. HANCOX.

Subscribed this 9th day of March 1846 before us:

STEPHEN J. HUNT,
DANIEL WHITING.