

J. MACGREGOR.

Stove.

No. 4,350.

Patented Jan'y 7, 1846.

Fig. 2

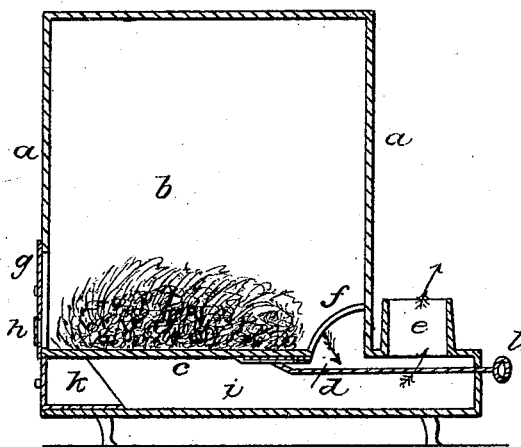


Fig. 1

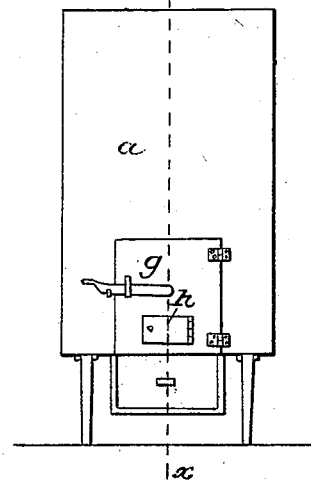
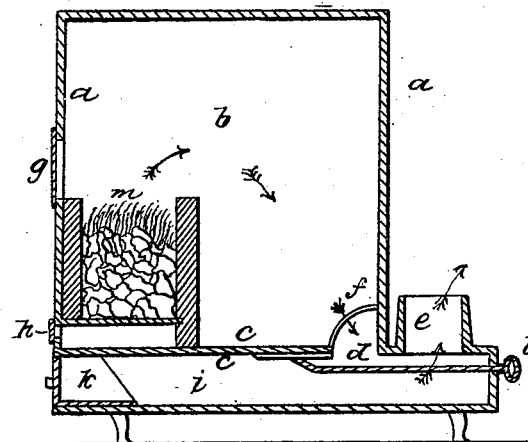


Fig. 3



UNITED STATES PATENT OFFICE.

JAMES MACGREGOR, JR., OF WILTON, NEW YORK.

STOVE FOR HEATING APARTMENTS.

Specification of Letters Patent No. 4,350, dated January 7, 1846; Antedated December 22, 1845.

To all whom it may concern:

Be it known that I, JAMES MACGREGOR, Jr., of Wilton, in the county of Saratoga and State of New York, have invented new and useful Improvements in Stoves for Heating Apartments, and that the following is a full, clear, and exact description of the principle or character thereof which distinguishes them from all other inventions for the same purpose before known, and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a front elevation of the stove, and Fig. 2, a longitudinal vertical section of the same, taken at the line (X X) of Fig. 1.

The same letters indicate like parts in all the figures.

In all stoves heretofore made much fuel has been wasted in consequence of the escape into the chimney of combustible and incom-
bustible gases at high degrees of temperature; and to obviate this, various devices have been suggested, most of which are of a very complex and expensive nature, such as a series of pipes for the circulation of the products of combustion before escaping into the chimney, but the most effective heretofore known is the air tight stove patented by Isaac Orr, which is seriously objected to on account of the explosions which take place within the stove, as it is necessary to close up all the apertures to and from the fire chamber to prevent the escape of combustible gases and all the products of combustion at too high a degree of temperature, and the consequent waste of fuel. To obviate these defects, I make the aperture for the escape of the products of combustion in the back part of the bottom plate of the fire chamber, or in any other part of the fire chamber, not however above the door for the admission of fuel and air, so that the products of combustion shall circulate freely within the chamber of combustion, above the fire, to insure the entire combustion of all combustible matter, and then escape into the chimney through the flue space in or near the bottom; there being a passage for air under the bottom plate of the fire chamber, passing by and communicating with the flue space leading from the fire chamber, and thence extending to the pipe or chimney, the said air passage being provided with a slid-

ing register or valve at the forward part to regulate the supply of air, and draft and ventilate the room.

In the accompanying drawings (a) represents the outer case of the stove which can be of any desired form, with a fire chamber (b) of considerable capacity for the circulation of the products of combustion within it, and with a bottom plate (c) for the reception of wood or other appropriate combustible. Toward the back part of this bottom plate there is a flue hole or space (d) for the escape of the products of combustion into the chimney (e), and to prevent the fuel from falling through, the aperture is covered with a grating (f). The door (g) for fuel should be made to fit accurately and is to extend down to the bottom plate with a small draft shutter or valve (h) at, or near the bottom. Under the bottom plate there is a passage (i) which extends from the front of the stove to the pipe or chimney, and into which the aperture for the escape of the products of combustion opens so that the gases, &c. are carried by the current of air that enters this passage into the chimney; and for the purpose of regulating the supply of air to this passage it is provided with a sliding register or damper (k). From this description it will be obvious that the hole or flue space for the escape of the products of combustion instead of being made in the bottom plate can be made near the bottom and pass into a vertical pipe or chimney, and it may also be a combustion of the air passage above described. The aperture or flue (d) may be provided with a damper (l), but this is by no means important, if the aperture be of the proper size, but to regulate this is the chief use of the damper.

From the foregoing it will be obvious that the products of combustion will not escape from the fire chamber until after they shall have circulated freely in the chamber, and the combustible gases have been fully consumed by admixture with atmospheric air, and that the combustion can be regulated and the draft facilitated by the air passage below and passing by the aperture or flue space (d). And that in consequence of this connection between the fire chamber and the air passage, an explosion cannot take place within the stove.

The application of this stove to the burning of coal, is fully represented in Fig. 3, which is a vertical section thereof, in which

(*m*) represents a fire pot and grate above the bottom plate (*c*) with the door (*g*) for the introduction of the coal above the fire pot, the small draft shutter or valve (*h*) being placed below it but above the bottom plate, and the aperture or flue space (*d*) for the escape of the products of combustion bearing the same relations to this and all the other parts of the stove as when applied to the wood stove.

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

Making the aperture for the escape of the

products of combustion in or near the bottom, (not under the fuel) and below the upper edge of the door, for the purpose and in the manner described. And I also claim the air-passage below the fire chamber and connecting with the fire chamber and escape pipe or chimney by the aperture for the escape of the products of combustion, for the purpose and in the manner described.

JAMES MACGREGOR, JR.

Witnesses:

CHAS. M. KELLER,

A. P. BROWNE.