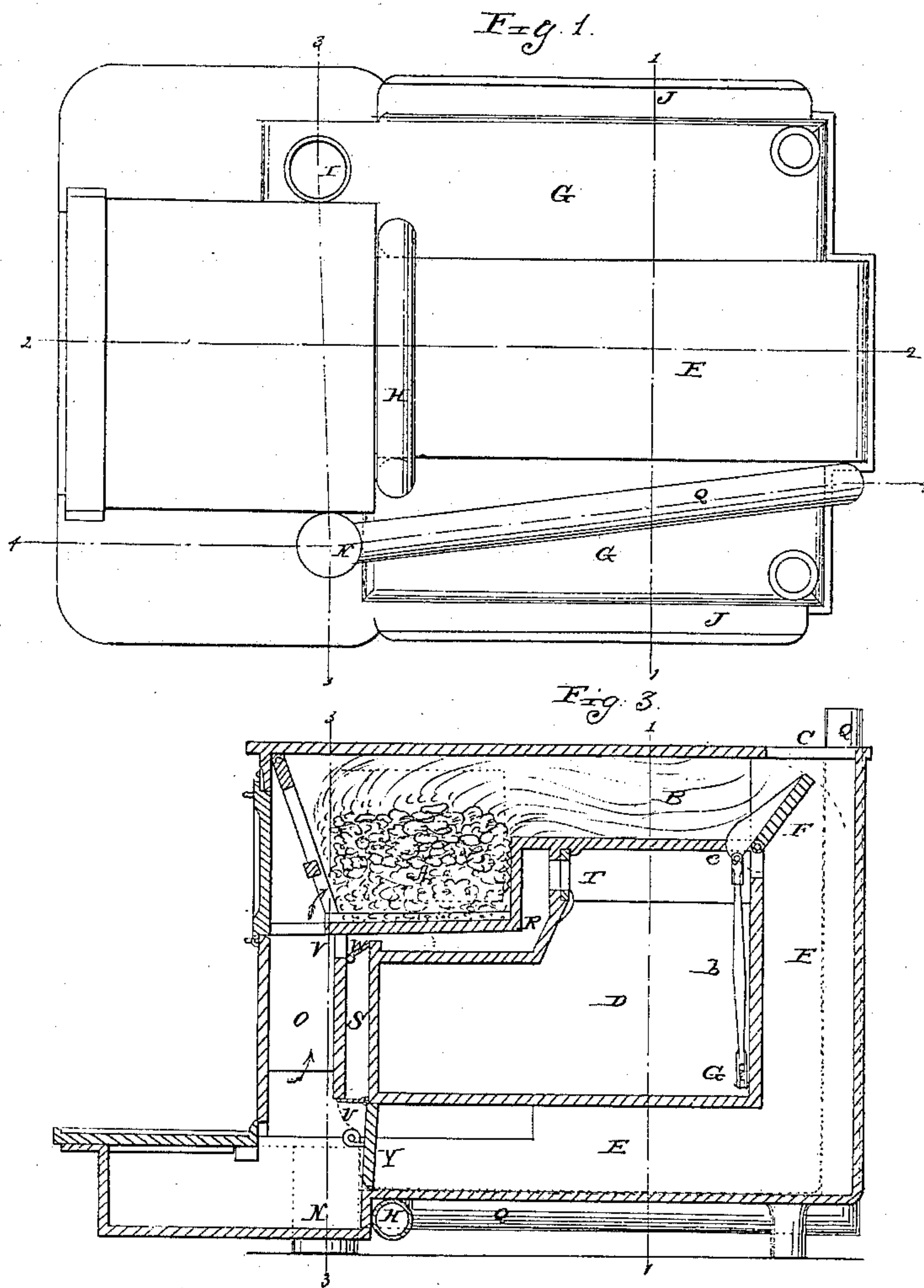


H. R. ROSE.
STOVE.

No. 8,534.

Patented Nov. 18, 1851.



UNITED STATES PATENT OFFICE.

HALE R. ROSE, OF GUILFORD, VERMONT.

STOVE.

Specification of Letters Patent No. 8,534, dated November 18, 1851.

To all whom it may concern:

Be it known that I, HALE R. ROSE, of Guilford, in the county of Windham and State of Vermont, have invented certain new and useful Improvements in Stoves to be Employed both for Cooking and Warming Apartments; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is an inverted plan or view of the bottom side of a stove constructed with my improvements. Fig. 2, is a vertical section in the line 1—1, shown in Figs. 1, 3, and 5. Fig. 3, is a vertical section in the line 2, 2, shown in Figs. 1, 2 and 4. Fig. 4, is a vertical section in the line 3, 3, shown in Figs. 1, 3, and 5. Fig. 5, is a vertical section in the line 4, 4, shown in Fig. 1.

Similar letters of reference indicate corresponding parts in each of the several figures.

My invention consists in an improved mode of regulating the heat of the oven by means of a self acting damper.

To enable others skilled in the art to make and use my invention I will proceed to describe fully its construction and operation.

A, represents the fire box, which is in the top part of the body of the stove.

B, is the flue leading to the chimney C.

D, is the oven placed in the middle of the body of the stove and extending right across, having a door on each side.

E, is a hot air flue leading from the front of the fire and oven, under the bottom and up the back of the oven to the chimney C. Its entrance may be closed by a door Y, when it is not required to heat the oven.

F, is a damper hung on a hinge at the point where the fire flue and the hot air flue meet each other.

G, (see Fig. 2,) is a lever having a long and short arm. It is hung on a fulcrum *a*, inside the oven. Its long arm is connected by a rod *b*, to a lever *c*, attached to the damper, and its short arm has a rod *d*, attached to it which passes through the top of the stove and is screwed at its upper end. This rod or the lower part of it, should be of some metal which is highly expansive by heat. A nut *e*, is fitted to the screwed part of the rod, and fitted also to a socket *f*, secured to the top of the stove, the rod passing through the said socket and the nut

turning freely in it but being prevented from working in the direction of the length of the rod. By turning the nut the rod *d*, is raised or lowered so as to adjust the damper and regulate the amount of opening either in the fire flue or hot air flue respectively, to the chimney.

G, G', are chambers under the oven in the lower part of the stove on each side of the flue E. They are connected by a pipe H, passing below.

I, is a pipe open at the bottom and forming one of the legs upon which the stove rests. It opens into the chamber G.

J, are hearths one on each side of the stove under the oven doors; they slide in and out. Under each hearth there is a series of holes *g, g*, which form communication between the chambers G, G', and the apartment in which the stove is placed. A pipe K, (see Fig. 4) coming under the floor or through the wall from the outside of the building admits fresh air into the chambers G, G', where it is heated and afterward admitted to the apartment through the holes *g, g*.

M, (see Fig. 4,) is a sliding damper which is placed above an opening *h*, leading from the chamber G, to the front of the fire. This opening is for the purpose of controlling the amount of air passing through the chambers or for admitting the greater part of it to the fire.

N, is a hollow leg upon which one corner of the stove is supported. It is closed at the bottom, but communicates at the top with the space O in front of the oven and fire box, the opening being regulated by a sliding damper P.

Q is a pipe leading from the hollow leg N, under and behind the stove; it is intended to be carried up to within a few inches of the top of the apartment, and is for the purpose of carrying off the vitiated air from the upper part of the apartment by means of the draft.

Between the back and bottom of the fire box and the upper part of the oven, and between the front of the oven and the space O, there is a passage R, S. The upper part of this passage is made to communicate, or not, as may be desired, with the upper part of the oven, by means of a sliding perforated damper or ventilator T; and the lower end is left open or closed by a hinged damper U. There is also an aperture V, in the passage immediately under the front

of the fire box; and a hinged damper W, is so placed as to close this aperture and leave the passage open, or open the aperture and close the passage. The damper is represented in the drawing in the latter position. The passage R, S, and dampers are to allow the steam from the oven and heat from under the fire box to pass down the front of the oven to the fire; or to allow the draft to pass through the oven to the fire.

X, (see Fig. 5), is an opening to admit warm air from the chamber G, to the oven.

The operation of the several parts is as follows. The damper is set by turning the nut *e*, so as to allow any required amount of heat to pass under the oven, and is so operated upon as to close or contract, or to enlarge the opening in the hot air flue according as the fire may be increased or decreased. If the fire be increased the oven becoming hotter the rod *d*, will expand and lower the end of the short arm of the lever G. The end of the long arm being raised, the damper is caused to lessen the opening in the flue E, and enlarge the opening in the fire flue, allowing more heat to escape direct to the chimney, an opposite effect being produced by the contraction of the rod. By this means the temperature of the oven may be kept uniform at any required height.

The amount of heated air admitted into the apartment is regulated by the damper M, which may be opened to allow any required amount to escape in the direction of the red arrows shown in Fig. 4, to the front of the fire or may be closed so as to let

it pass through the openings *g, g*. The vitiated air entering the pipe Q, will be drawn by the draft in the direction of the black arrows shown in Figs. 3, and 4, into the fire.

In hot weather when it is desired to keep the lower part of the stove cool, and it is not required to use the oven, the door Y, in the hot air flue may be closed and the oven doors thrown open. The ventilator T, being thrown open and the damper W, being thrown back to the position shown in Fig. 3, the air is drawn through the oven into the fire box by the draft of the fire. In baking the damper W, should be closed upon the aperture V, and the passage R, S, opened, the damper V, at the bottom being also open, this allows the heater air from under the fire box to pass the front of the oven, the ventilator T, allowing the steam to escape from the oven when necessary.

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

Placing the damper F, between the fire and hot air flues B' and E, so as to control the amount of opening in each respectively, and governing the same by the expansion of the rod *d*, substantially as herein described, for the purpose of regulating the heat of the oven. I do not claim the expanding rod *d*, irrespective of its connection with the damper placed as described.

H. R. ROSE.

Witnesses:

CHAS. H. DENISON,
STEPHEN D. BELL.