2 Sheets—Sheet 1.

A. RALSTON.

Cooking Stove.

No. 21,084. Patented Aug. 3, 1858.

Fig. 1

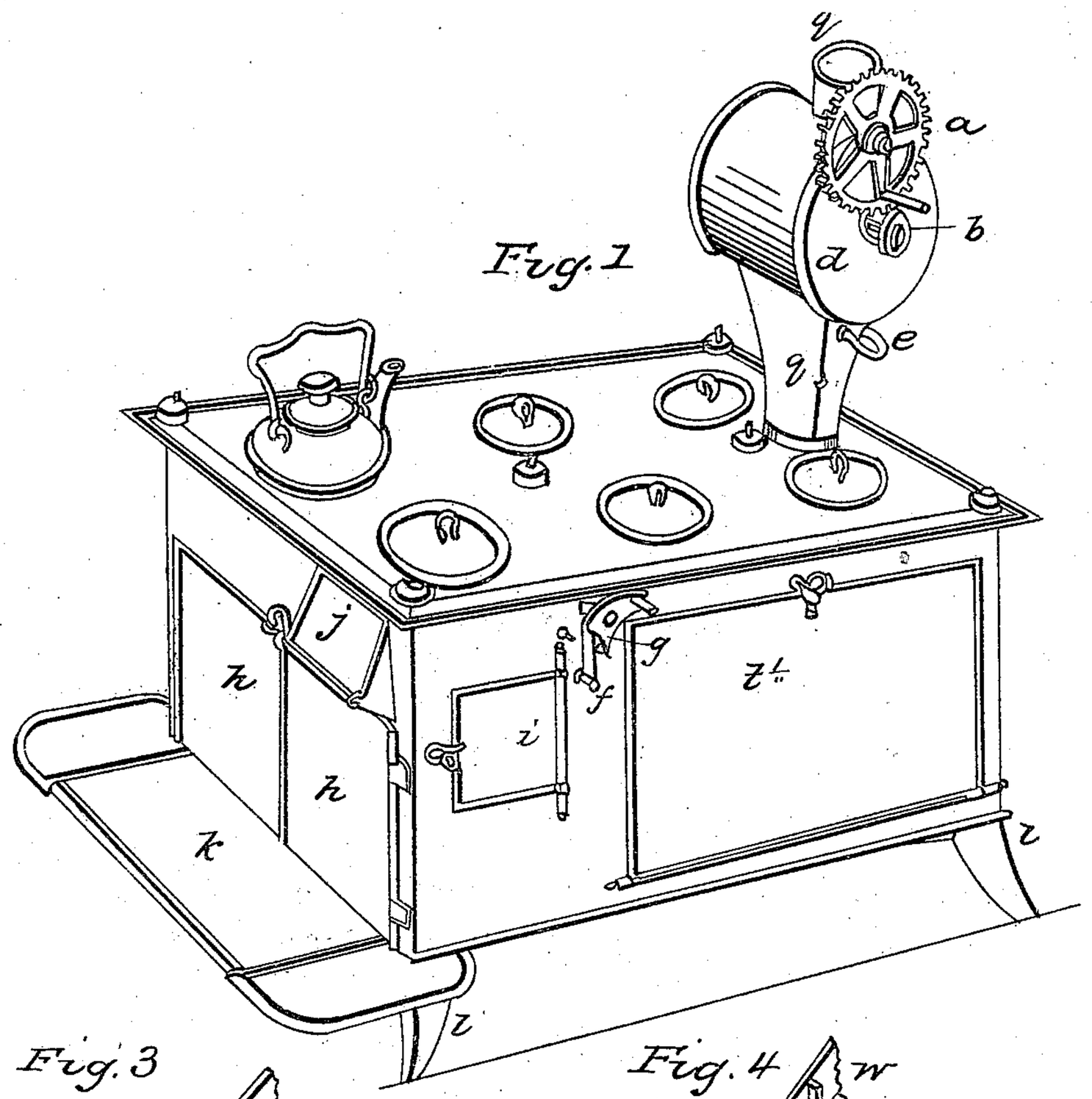


Fig. 3

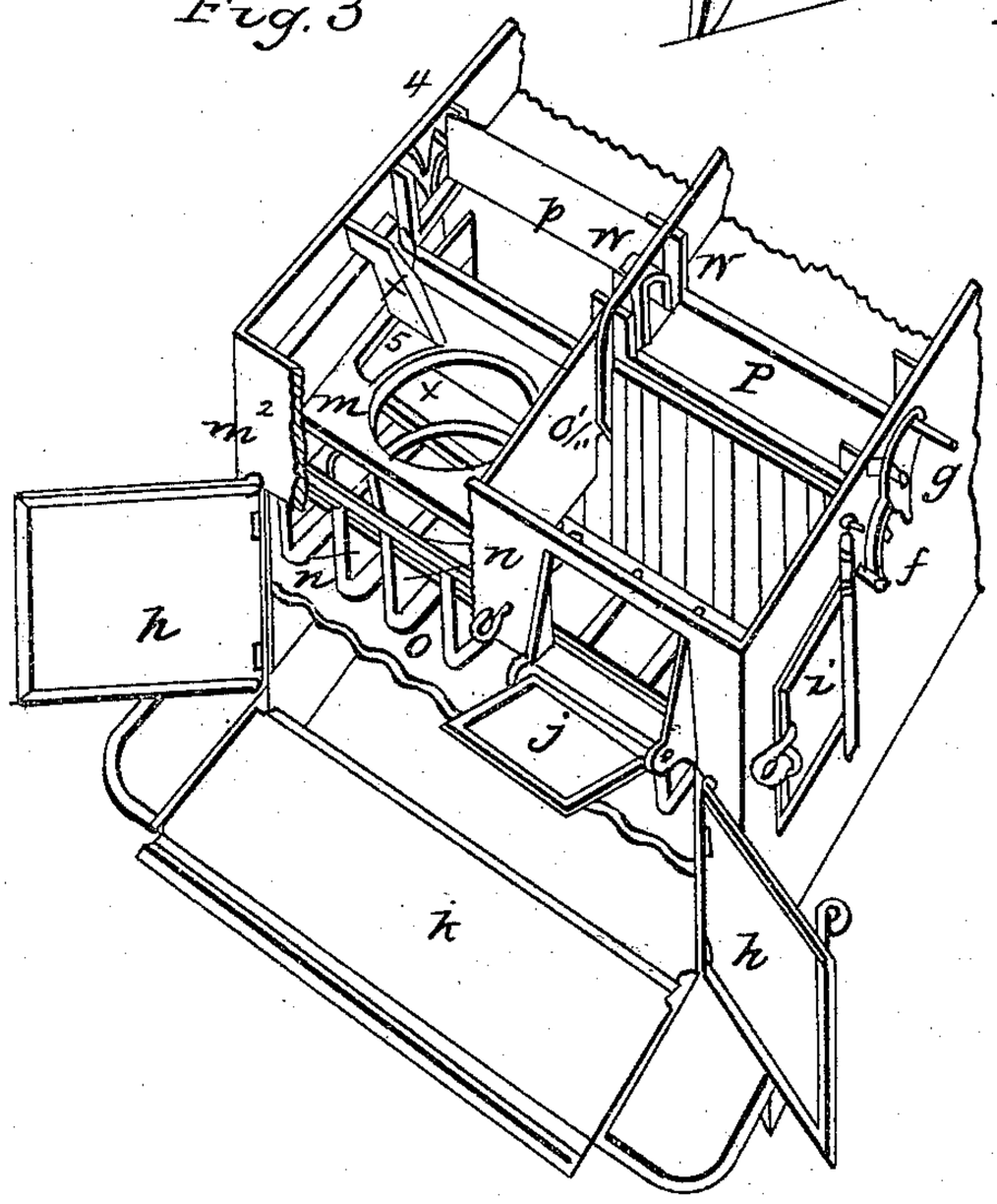
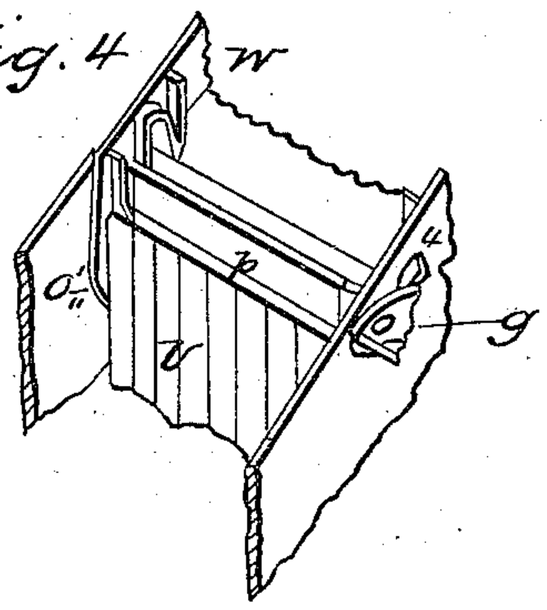


Fig. 4



2 Sheets—Sheet 2.

A. RALSTON.

Cooking Stove.

No. 21,084. Patented Aug. 3, 1858.

Fig. 2

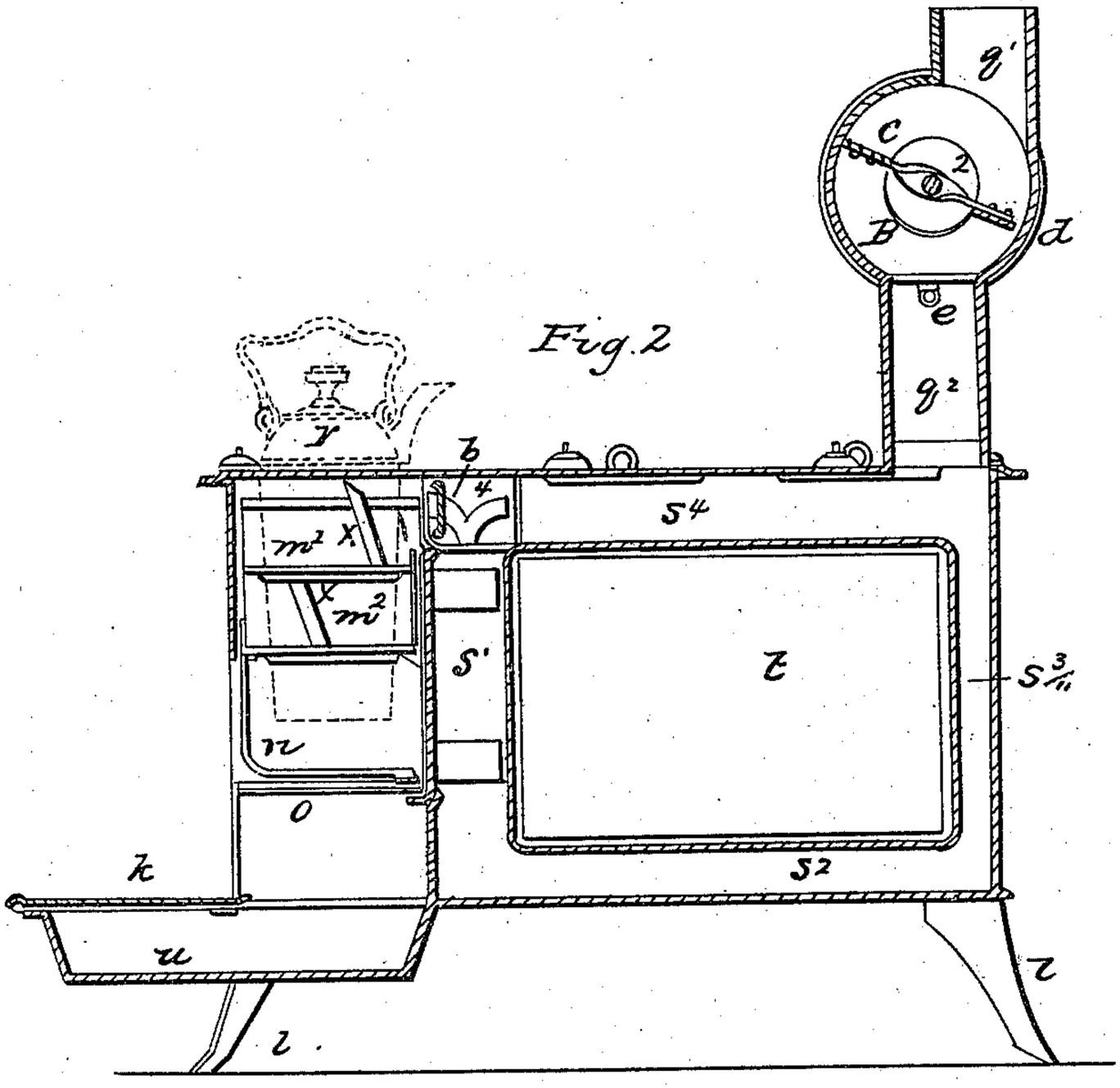


Fig. 7

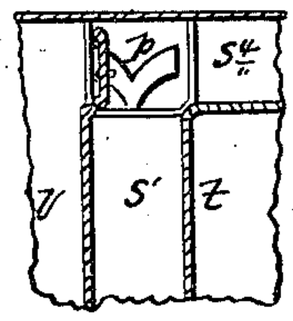


Fig. 8

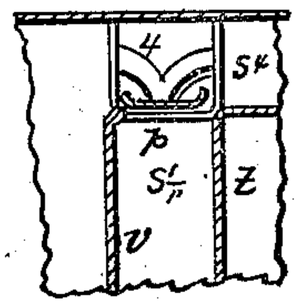


Fig. 9.

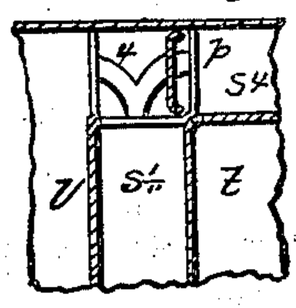


Fig. 6

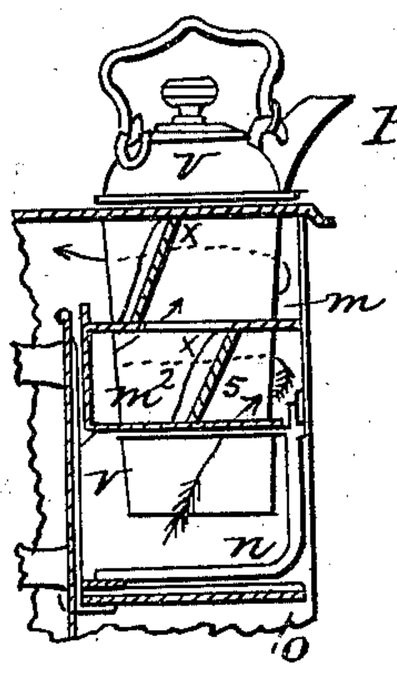
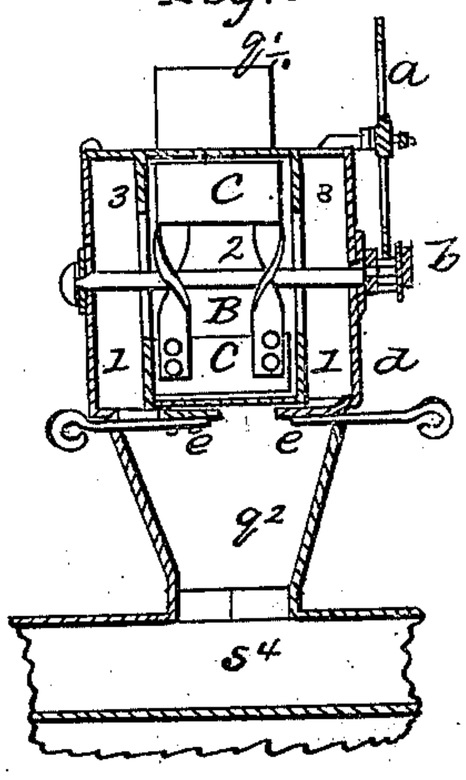


Fig. 5



UNITED STATES PATENT OFFICE.

A. RALSTON, OF WEST MIDDLETOWN, PENNSYLVANIA.

STOVE.

Specification of Letters Patent No. 21,084, dated August 3, 1858.

To all whom it may concern:

Be it known that I, ANDREW RALSTON, of West Middletown, in the county of Washington and State of Pennsylvania, have invented certain new and useful Improvements in 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, similar letters referring to similar parts.

The nature of my invention consists in an arrangement for regulating and throwing the draft to either side of the stove, and for carrying the heat a number of times around the cooking vessels; and also in an arrangement of the chambers (1) and (B) and the regulating valves (*e*) of the fan on the collar of the stove where the pipe is usually attached.

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

In the accompanying drawings—

Figure 1, is a perspective view of the stove. Fig. 2, is a sectional view of the stove. Fig. 3, is a broken and sectional view of the stove. Fig. 4, is a broken and sectional view and represents the arrangement of the damper. Fig. 5, is a cut or sectional view of the arrangement for carrying off the noxious gases, cleaning out the flues and increasing the draft of the stove. Fig. 6, is a broken and a sectional view and represents the arrangement for carrying the heat a number of times around the cooking vessels. Figs. 7, 8, and 9 are broken and sectional views and represent the damper used for regulating the draft of the stove, in three different positions.

In the accompanying drawings (*a*) is the driving wheel and (*b*) is the pinion of the fan used for cleaning out the flues, carrying off gases and increasing the draft, (*d*) is the casing and (C) the wings of the fan, (2) is the shaft which supports the wings (C) and their arms, (1) are the side chambers and (B) the center chamber of the fan, (q^2) is the ingress and (q^1) egress flues of the fan. These flues and the chambers (1) and (B) also act as a flue or pipe to the stove; (*e*) are slide valves to the side chambers (1). These slide valves also serve as dampers to the flue or pipe of the stove, thereby regulating the quantity of draft to the stove; when one of the slide valves (*e*) is open and the other closed (as shown in Fig. 5,) a vacuum is created in the closed chamber; there is then necessarily an increase of draft to the side of the stove which has the open chamber in the fan; it will be observed that the wings of the fan are incased, and there is no other egress in the fan for the smoke, air, dust, ashes, soot and all noxious gases but the flue (q^1) so that every action of the fan has a tendency in all cases to carry whatever it will control, up and out through the egress flue (q^1).

The action of the fan is as follows—The air, dust, gases, &c., enter the chamber (1) through the flue (q^2) and is carried into chamber (B) through the openings around shaft 2, and from chamber (B) up and out through the egress flue (q^1).

(*j*) is the front and (*i*) the side fuel doors, (*h*) is the hearth doors, (*k*) is the hearth plate, (t^1) is the oven door, (*t*) is the oven, (s^1) is the front, (s^2) is the bottom, (s^3) is the back and (s^4) is the top flues of the oven, (*l*) are the feet, (*u*) is the ash pit, (*o*) is the fire hearth for wood, when used as a wood stove, (*n*) is the grate for coal, when used as a coal stove. The fire plate, (*o*) and the grate (*n*) are arranged so as to be easily changed when it is desired, to be changed from a wood to a coal or from a coal to a wood stove.

(*v*) is the fire back, (o^1) is a division plate which divides the fire chamber and extends along the top flue (s^4) dividing it and the fire chamber into two apartments; by this arrangement of the division plate (o^1) the draft and heat can be thrown to either side of the stove.

(*p*) is the damper, (*w*) is a curvated bearing which is on the division plate (o^1). The inner journals of the dampers (*p*) work on the two concaves of the curvated bearing (*w*) and the outer journal works in the openings (4) in the side of the stove, (the form and shape of the openings are clearly shown in Figs. 7, 8 and 9—at 4.) (*g*) is the cam-ratchet and (*f*) the ratchet pawl; it will be observed that there is a damper on each side of the division plate (o^1). By this arrangement of the dampers (*p*), (each of which has three journals) the curvated bearings (*w*), the openings (4) and the cam ratchet (*g*) and the ratchet pawl (*f*), the dampers (*p*) can be held in any desired position and can be thrown back, forward, or over the flue (s^1) as shown in Figs. 7, 8 and

9; when the draft and heat are desired on one side and not on the other side of the stove, the damper (p) on the side to be heated, is placed in the position shown in Fig. 8, and on the side not to be heated, the damper (p) is placed in the position shown in Fig. 7.

The plates (m^1) and (m^2) with their openings (5) and division pieces (x) are used for the purpose of carrying the heat a number of times around the cooking vessels; the course of the heat is plainly shown in Fig. 6, the red arrows representing the course of the heat. The heat below the plate (m^2) passes up through the opening (5) and around the vessel (r) and between the plates (m^2) and (m^1) and up through the opening (5) in plate (m^1) and around the vessel (r) to the flue (s^4). By this arrangement of the plates (m^1) and (m^2) with their division pieces (x) and openings (5), and the large openings through which the cooking vessel passes, the heating of water and cooking in general are accomplished in half the time usually occupied, thereby saving time and fuel to the consumer.

Having thus described the nature, construction, and operation of my improvements in stoves, what I claim as of my invention and desire to secure by Letters Patent of the United States is;

1. The arrangement of the side chambers (1), the center chamber (B), and the regulating valves (e) of the fan on the collar of the stove where the pipe is usually attached, as herein described and set forth.

2. The arrangement of the curvated bearing (w), the opening (4), the cam ratchet (g), the ratchet pawl (f), the damper (p) with its three journals and the division plate (o^1), as herein described and for the purpose set forth.

3. The arrangement of the plates (m^1) and (m^2) with their division pieces (x) and the openings (5) and the large openings for the cooking vessels, as herein described and for the purpose set forth.

ANDREW RALSTON.

Witnesses:
G. P. Steck,
Alexander Hays.