J. D. CONNER.

Cooking Stove.

No. 50,339. Patented Oct. 10, 1865.

Fig. 1

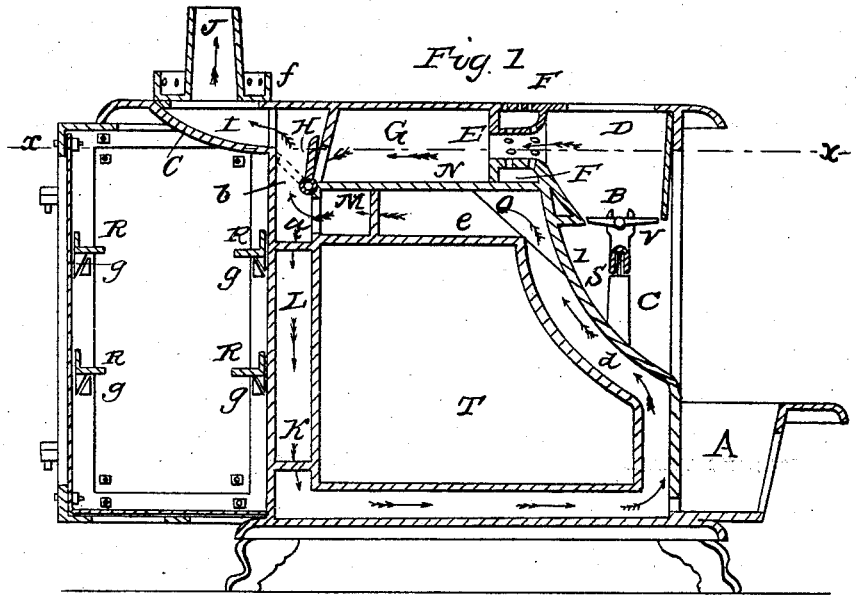
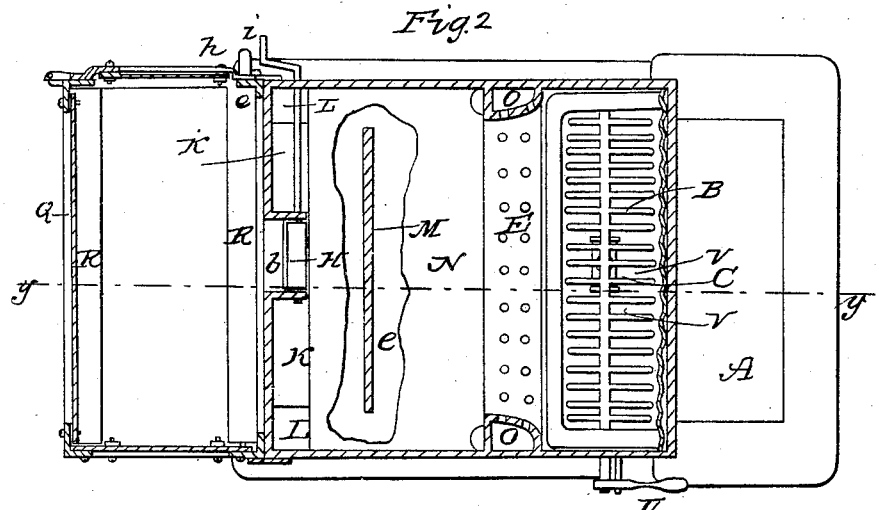


Fig. 2



WITNESSES

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UNITED STATES PATENT OFFICE.

J. D. CONNER, OF BLOOMINGTON, ILLINOIS.

IMPROVEMENT IN COOKING-STOVES.

Specification forming part of Letters Patent No. **50,339**, dated October 10, 1865.

To all whom it may concern:

Be it known that I, J. D. CONNER, of Bloomington, in the county of McLean and State of Illinois, have invented a new and useful Improvement in Cooking-Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical longitudinal section of a cooking-stove made according to my invention, *y*, Fig. 2, indicating the line of section. Fig. 2 is a horizontal section, taken on the line *x* of Fig. 1.

Similar letters of reference indicate like parts.

The object of this invention is to produce a cooking-stove whose capacity for work will be greater, while its consumption of fuel will be less, than what is common in stoves of the same class. The path of the products of combustion is such as to make the greatest use possible of their heat, and their place of exit is directly over a supplementary oven suspended behind the back of the stove.

A designates the ash-pit of the stove. It is placed in front, outside of the front plate of the stove. D is the fire-place. It has a revolving grate, which is rotated by means of a wrench, U, applied to its axle W. The grate is supported chiefly by a pillar, C, rising from the flue-plate S. The pillar C is formed at top into two forked arms, V V, in which the axle of the grate rests and in which it is free to rotate. The products of combustion pass from the fire-chamber through the narrow perforated throat E into an enlarged gas-combustion chamber, G, where they are burned in the presence of the air which is admitted into the throat through its perforations, as hereinafter described. The hot air and gases go thence through the passage-way of damper H, if that damper is thrown back, as indicated in red outline, across the vertical flue *b*, into the recess I, which is a shallow chamber made in the extension *c* of the top plate of the stove, and thence into the outlet-pipe J. If, however, the damper H is up, as shown in full lines in Fig. 1, the products of combustion pass from the gas-combustion chamber into the descending flues L L on each side of the box of the vertical flue. These flues unite below the bottom *a* of the short vertical flue *b*, and then occupy the entire width of the back part of the stove. An intermediary plate, K, is fixed across it near its bottom, but the ends of this plate do not reach the sides of the stove. It serves as a deflector to the gases from the fire, and causes them to turn toward the right and left hand corners of the oven in order to reach the flue below the oven. The gases thence pass below the oven toward the front of the stove into an ascending flue, *d*, whose course is in front of the oven and behind the ash-pit and behind the front flue-plate, S, uniting at the top of the oven with a horizontal flue, *e*, whose course is over the top of the oven toward the back of the stove. The flue *e* is separated from the gas-combustion chamber by the plate N, and the said flue has a deflecting-plate, M, fixed across its middle part, which compels the gases to pass toward the sides of the stove in order to reach the vertical flue *b*. This arrangement causes the hot air and gases to take circuitous or deflected courses in their escape through the stove and gives them better opportunities of imparting their heat to the back, bottom, and top of the oven than they would have if no deflecting-plates were used.

The throat E extends nearly across the stove, and is inclosed above and below and at each end by an air-space, F. The walls of the throat are freely perforated to allow air to enter it from the air-space, and the air-space is supplied with air from without the stove by means of holes (not shown) made through the sides of the stove, and by holes made in the top plate of the stove, all opening into the space F, and also by means of the lateral air-passages O O, which begin in the flue-plate S at the line indicated by the figure 1, and open in the chambers F and G, their mouths in the chamber G being near the place of the numeral 2. The lateral air-passages O take air from below the grate B and conduct it into the chamber F, whence it issues into the throat through its perforated sides, and also directly into the gas-combustion chamber G, in both cases serving to supply oxygen to the hot gases from the fire, so as to cause their more perfect combustion.

The back part of the stove is made to receive a closet, Q, or supplementary oven, which is secured in place by means of flanges *e'* projecting from the stove, and by means of bolts (not seen) which connect the upper part of the closet to the outer edge of the extension *c* of the top plate.

The letters R designate slats for supporting shelves or pans in the closet. The slats are held in place by means of dovetailed recesses made in the corners of the closet, which receive angular projections *g*, which project downward from the ends of the slats. The closet has a door at each end, the door *h* (seen in Fig. 2) being closed by a latch, *i*. The frame or skeleton of the closet is to be made of cast-iron, to which are bolted the top and bottom and back of the closet. By this construction I make the closet more durable and more simple in its construction, bolt-holes being left in the casing to permit the tin sides of the closet to be easily secured to the cast-iron frame.

The outlet-pipe J has an enlargement, *f*, like a trough around its base, which is wide enough and long enough to cover the recess or open space I. They are cast in one piece, the enlargement *f* serving as the bottom of the usual water-reservoir which surrounds the discharge-pipe of the stove. The upper part of the reservoir may be of tin, and is bolted to the rim of the bottom *f*, holes being left in the latter for that purpose in the operation of casting.

I claim as new, and desire to secure by Letters Patent—

1. The pillar C, with its forked arms V V, for supporting the grate, in combination with a dumping-grate, substantially as described.

2. The perforated throat E, inclosed within an air-chamber, F, substantially as described.

3. The combination of the perforated throat E with the gas-combustion chamber G, into which it discharges the masses of mixed gases and air, and with the lateral air-passages, O, which deliver air into both from below the grate, substantially as described.

4. The method, substantially as above described, of securing to the closet the slats R—to wit, by angular projections fitting into angular recesses made in the corners of the closet.

5. The method herein described of making the closet Q—to wit, forming an open frame or skeleton by casting or otherwise and securing the back and top and bottom plates or walls to the frame by means of bolts or equivalent devices—substantially as described.

6. Making the bottom and tube of the water-reservoir in one piece, by casting or otherwise, securing the top of the reservoir to the edges of the bottom *f* through bolt-holes made therein for that purpose, substantially as described.

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Witnesess:
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