J. W. LANE.

Heating Stove.

No. 48,289. Patented June 20, 1865.

Fig. 1.

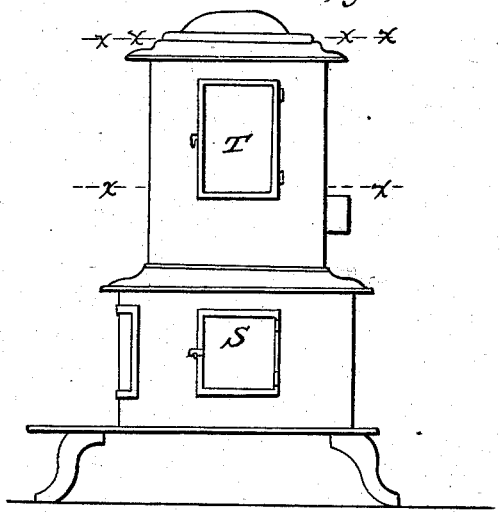


Fig. 2

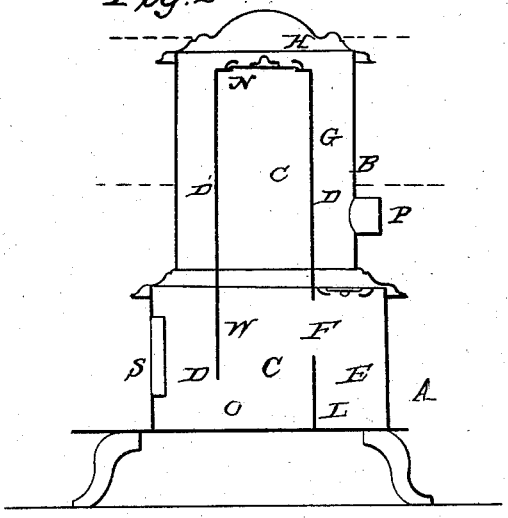


Fig. 3

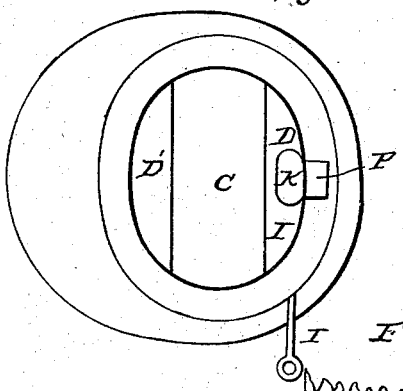


Fig. 5

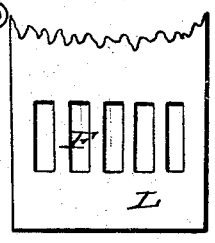
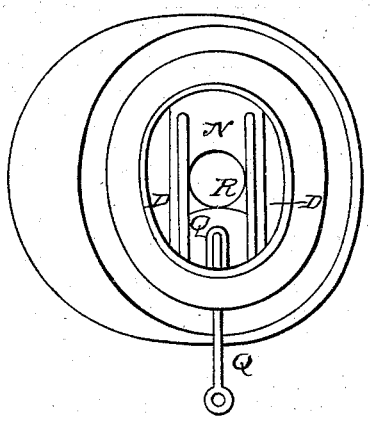


Fig. 4



WITNESSES

Marcus D. Norton

Jas. P. Orscomb

INVENTOR

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UNITED STATES PATENT OFFICE.

JOHN W. LANE, OF NEWTON, NEW JERSEY.

WOOD BASE-BURNING STOVE.

Specification forming part of Letters Patent No. **48,289**, dated June 20, 1865.

To all whom it may concern:

Be it known that I, JOHN W. LANE, of the town of Newton, county of Sussex, State of New Jersey, have invented new and useful Improvements in Base-Burning Stoves for the Burning of Wood, &c., therein, as and in the manner hereinafter set forth; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being hereby had to the accompanying drawings, with letters of reference marked thereon, which said drawings make a part of this specification.

Like letters represent and refer to like or corresponding parts.

Figure 1 is an end view of the said stove. Fig. 2 is a sectional view vertically through the center of the said stove from front to rear, and showing the several parts hereinafter more fully described. Fig. 3 is a cross-section on the line *x*, Fig. 1, and showing the rear and intermediate damper, hereinafter described. Fig. 4 is a top cross-section on the line of *x x*, Fig. 1, and showing the upper damper, hereinafter set forth. Fig. 5 shows the open grate in the rear of fire-chamber, and described more fully hereinafter.

The nature of my invention and improvements consists in the employment of a fire-chamber in wood-stoves which shall extend from the bottom to the top of the said stove, with vertical flues or hot-air chambers opposite to each other, and upon the front and rear parts of the said stove, with such fire-chamber between, and which said flues or hot-air chambers unite into or with a flue at the top of such fire-chamber, the whole being constructed and combined substantially as herein described and set forth, so that the wood in such fire-chamber shall be burned from the bottom or base of said stove, while the wood above shall be charred or reduced to charcoal, by means of which there is great economy in the use of wood as fuel.

Having thus described the nature of my invention, I will here proceed to describe the construction and operation of the same, which is as follows, to wit: I usually construct said stove in the form of an oval, in size and in height as may be deemed best, although it is quite evident that any other shape than that of an oval may be used and carry out the general plan of my invention. I prefer, however, the oval shape, yet the principle in all cases will, of course, be the same.

A, Figs. 1 and 2, is the base of the stove. B, same figures, is the upper section, which is in size somewhat less than the said base A.

C C is the fire-chamber.

D is the rear flue or hot air-chamber, which extends from the top of the base A up to the top of the stove, where it unites with the flue H, just over the top of the said fire-chamber C.

E is an air-chamber in the base A, and is directly under the said hot-air chamber D, and communicating with the same by means of the damper I in dotted lines at Fig. 4, which is for the purpose of closing the damper-space K, same figure. By means of this damper the line or direction of the draft is changed or controlled. By its use the direct draft may be had, which is done while the same is open, and when closed a circuit-draft is obtained, and is over the top of the said fire-chamber and from the base thereof.

F is the open grate between the fire pot or chamber C and the base or lower chamber, E, which open grate may fully be seen at Fig. 5. This grate is for the purpose of obtaining the direct draft which is often desirable. This damper is in the partition-plate L and on the back part of the said stove.

W is the front partition-plate, and extends from the top of plate N, Figs. 2 and 4, downward toward the bottom plate of the stove, leaving the space *o* between its lower end and the bottom plate of the stove. This space *o* is the point where the circuit-draft enters the front flue or hot-air chamber, D′ D′, Figs. 2, 3, and 4, and is the very bottom, or nearly so, of the fire-chamber C.

G is the partition-plate between the said back flue or hot-air chamber, D, and the said fire-chamber C, and unites with the partition-plate L at or near the top of the base A.

In the top plate, N, Figs. 2 and 4, which is the upper plate of the said fire-chamber C, there is a damper, Q, which is for the purpose of allowing the escape of any unconsumed gases which may gather in the upper part of the said fire-chamber C; also, to check the draft of the circuit-line and give a draft upward through the entire mass of wood in said

fire-chamber whenever deemed best so to do. P is the exit-pipe leading to the chimney. When the said damper Q is closed over the damper-space R, Fig. 4, there will, of course, be no upward draft through the wood in said fire-chamber C. The wood above the said open space *o* will be charred or reduced to charcoal.

S, Fig. 1, is the lower door for the purpose of admitting the necessary atmospheric air to start and continue combustion in the said fire-chamber; also, to allow of the removing of ashes, &c., from the said fire-chamber C.

T, Fig. 1, is the door in the upper section, B, for the purpose of supplying the said fire-chamber C with the necessary fuel. A furnace constructed upon the plan above described, and of sufficient capacity, may be used to a good purpose in the manufacture of charcoal.

Stoves constructed upon this principle are cheap and durable, while there is great economy in the use of fuel and the obtaining of a great degree of heat from a small consumption of the fuel, as aforesaid. The entire surface exposed to the room when said stove may be used radiates heat in the most perfect and satisfactory manner. All parts or compartments of the said stove should be air-tight, except where the atmospheric air enters in the place and manner aforesaid for the purpose of starting combustion, &c., and to permit of the escape of any excess of gases through the damper at the top of the said fire-chamber, and for the direct and circuit drafts, as aforesaid described.

I do not generally use a fire-grate horizontally across the fire-chamber at or near the bottom thereof, still one may be used with good results. Any number of such devices of sufficient size might be employed to good advantage in the manufacture of charcoal for the market.

Having thus described my said invention and improvements, what I claim, and desire to secure by Letters Patent, is—

1. The employment of the fire box or chamber C, containing the open and vertical grate F in the rear and lower part of the partition wall or plate L, and also containing the opening or space *o* in the front, and at or near the lower end of the wall or plate W, in the manner and for the purposes substantially as herein described and set forth.

2. The combination of the vertical grate F with the opening or space *o* at the bottom of vertical partition-plate W, in the manner substantially as and for the purposes herein set forth.

3. The damper Q, in combination with the intermediate flue or space, H, and fire-chamber C, in the manner and for the purposes substantially as herein described and set forth.

In testimony whereof I have, on this 3d day of March, A. D. 1864, hereunto set my hand.

JOHN W. LANE.

Witnesses:
MARCUS P. NORTON,
I. P. ORSBORNE.