

J. L. WILLSON.

Heating Stove.

No. 44,208.

Patented Sept. 13, 1864.

Fig. 1.

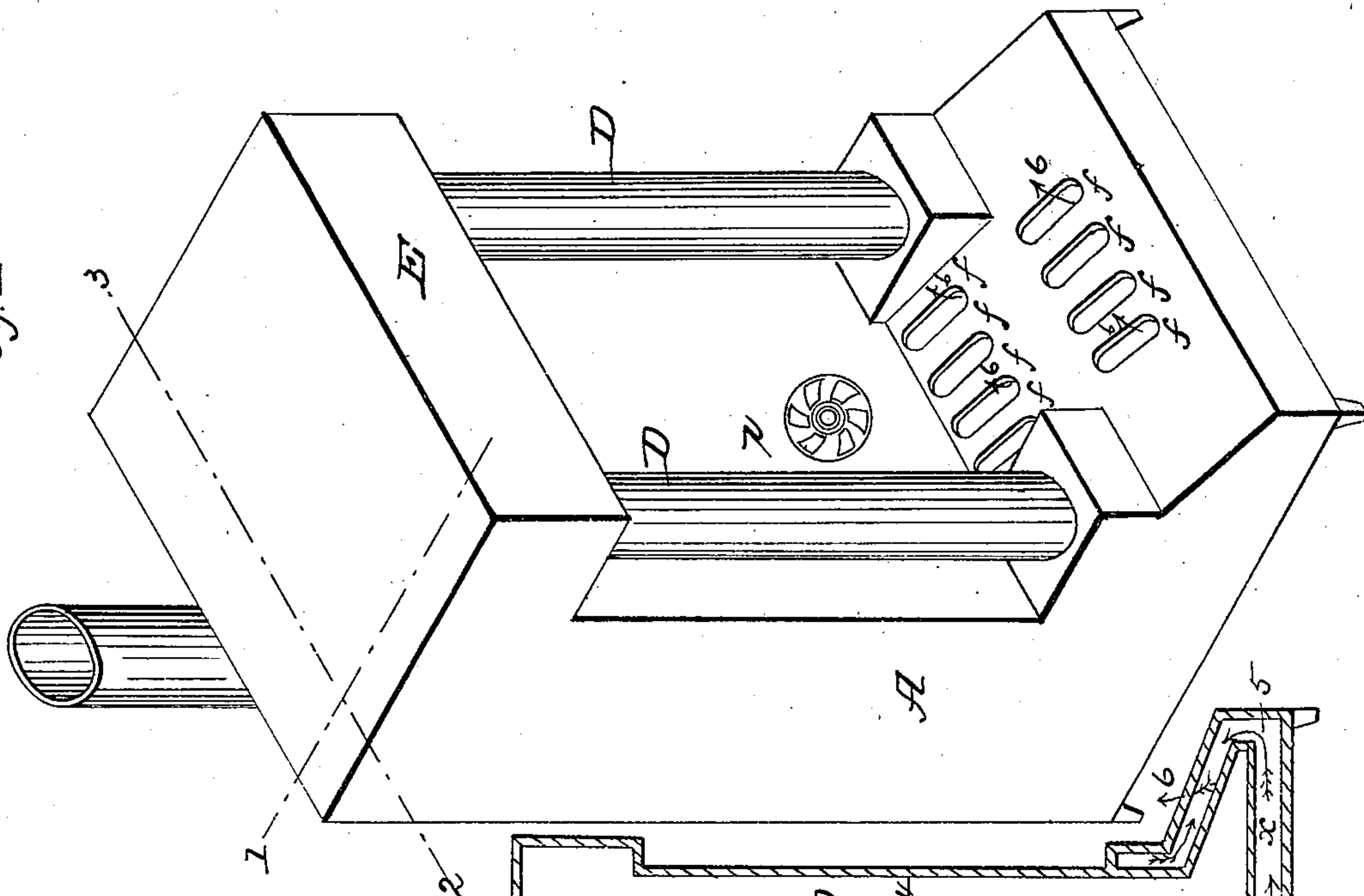


Fig. 2.

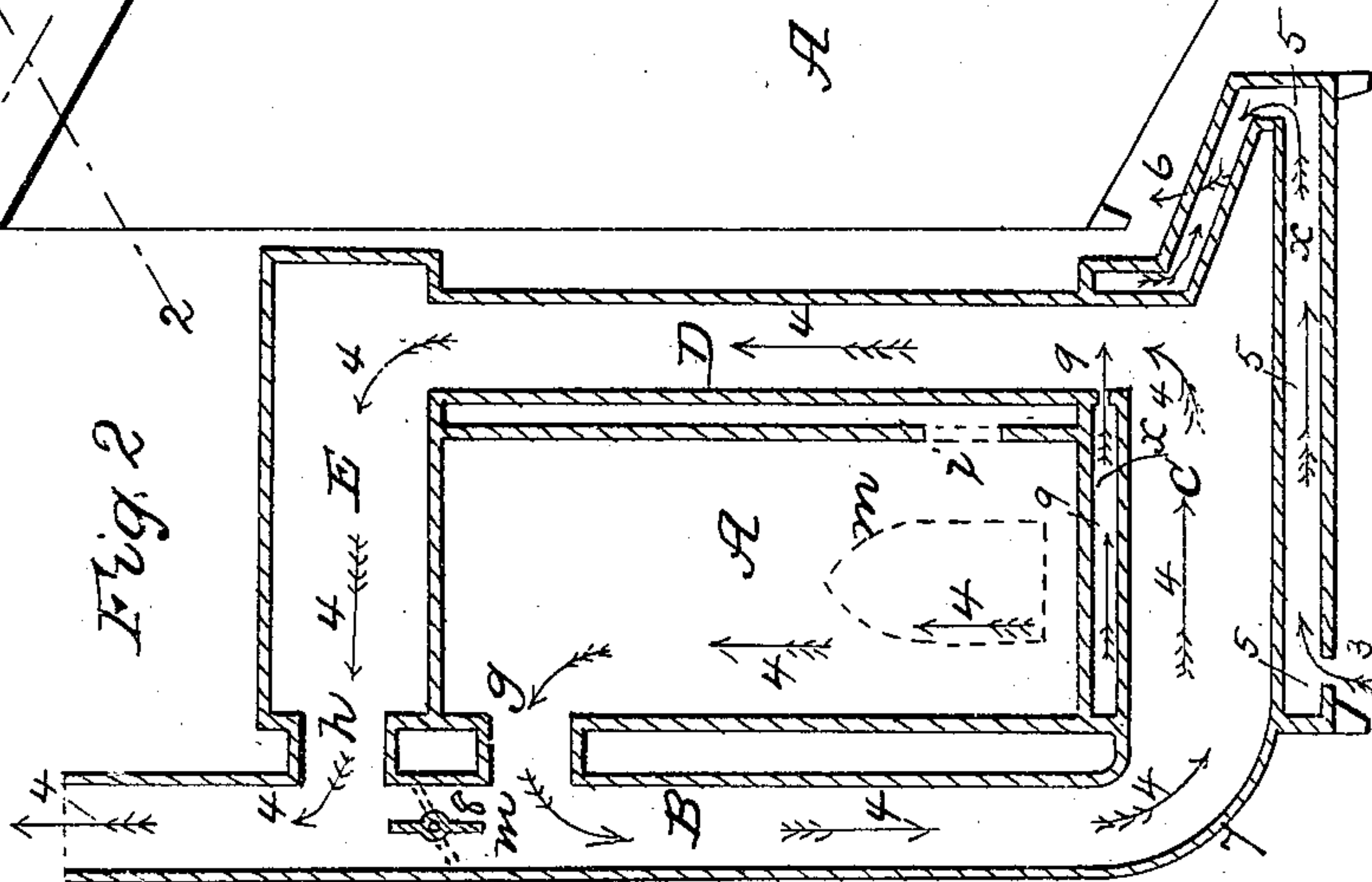
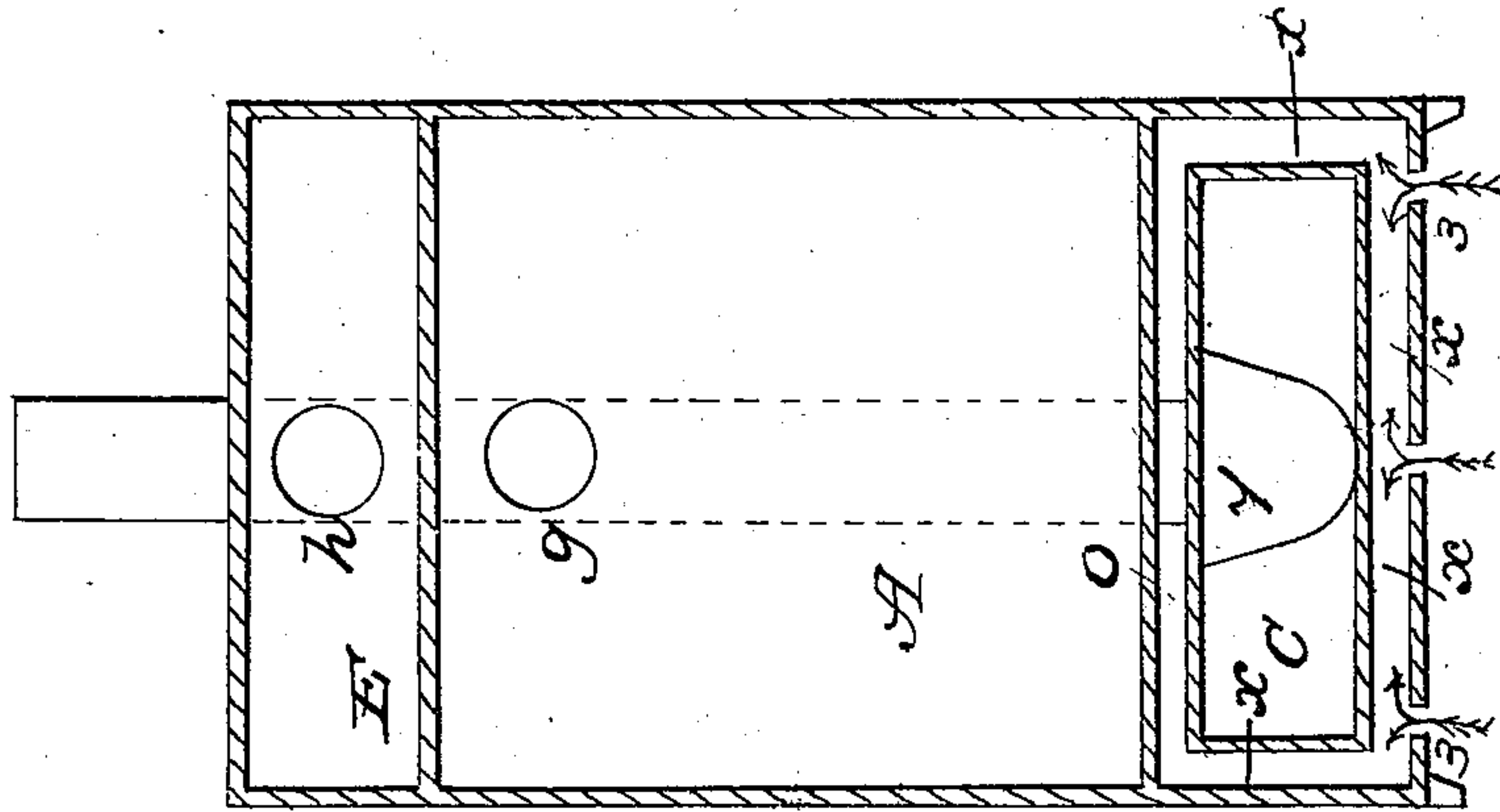


Fig. 3.



Witnesses  
Sol. Willson  
John Kane

Inventor  
James L. Willson



# UNITED STATES PATENT OFFICE.

JAMES L. WILLSON, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. 44,208, dated September 13, 1864.

*To all whom it may concern:*

Be it known that I, JAMES L. WILLSON, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement 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.

The nature of my invention consists in providing a stove with air, heat-chambers, and flues, constructed, arranged, and operating in the manner hereinafter described.

To enable others skilled in the art of constructing stoves, I will proceed to describe its construction and operation.

In the accompanying drawings, Figure 1 is a perspective view of my improved stove. Fig. 2 represents a sectional view of the same through or at the point indicated by the line marked 1. (See Fig. 1.) Fig. 3 represents a sectional view through or at the point indicated by the line marked 2. (See Fig. 1.)

In the accompanying drawings, A represents the fire-box of the stove.

B represents the pipe or flue, which, with its branches *g* and *h*, connects the fire-box A with the heat chambers E and C, which are also connected with each other by means of two hollow columns, (marked D.) The heat-chamber C is surrounded by an air-chamber, (marked *x*,) into which is admitted cold air through the openings marked 3.

*m* represents the fire-door, and *i* the register of the fire-box A.

*f* represents openings or registers connected with the air chamber *x*.

7 represents an elbow for connecting the pipe B with the heat-chamber C.

*n* represents a valve placed in the pipe or flue B between the branches *g* and *h*.

I propose making the heat-chamber C, columns D, and pipe B of sheet iron, and the balance of the stove of cast-iron; but it will be readily observed that the entire stove can be, if desired, made of either cast or sheet iron.

The form, size, and manner of constructing the various parts of my improved stove I leave to the skill and good judgment of the mechanic skilled in the art of constructing stoves.

The operation of my improvement is as follows: Having all things constructed and arranged as herein described and represented, I make a fire in the fire-box A, and after it

has sufficiently kindled so as to burn without making much smoke, I then turn the valve in the position represented by the dotted lines 8, which will cause the heat (indicated by arrows marked 4) to pass up and through the branch *g* into pipe B and down it into the heat-chamber C, and from it up through the columns D into the heat-chamber E, and from it the heat finally passes out through the branch *h* into the pipe B, and from it into the flue or chimney. The cold air (represented by arrows marked 5) enters the air-chamber *x* through openings 3, and becomes heated and passes out, as indicated by arrow-points marked 6, through the openings or registers *f*; or the heated air in the chamber *x* may be made to pass into the columns D, as shown by the arrows marked 9.

The advantages of my improvement are as follows: first, economy in fuel, by retaining and causing the heat to pass through and traverse the various flues and chambers herein described and represented; second, in causing the heat to be thrown down and through the bottom part of the stove, thereby making the lower part of the stove the hottest part, which is a very desirable thing for ladies, who are compelled, when they desire to warm their feet at the stoves now in common use, to raise their feet to an elevation which is not, to them, at all desirable, or else go with cold feet, which is a very prolific source of disease; third, by my improvement the heat of the stove is brought in contact with the coldest air in the room, which is always next to the floor.

Having thus described the nature, construction, operation, and advantages of my improvement in stoves, what I claim as of my invention is—

1. The arrangement of the fire-box A, pipe B, branches *g* and *h*, valve *n*, heat-chambers C and E, columns D, cold-air chamber *x*, with openings 3 and *f*, the whole being constructed, arranged, and operating substantially as herein described, and for the purpose set forth.

2. Placing under the fire-box of stoves a heat-chamber, surrounded by a cold-air chamber, said heat-chamber being connected with a flue or flues and the fire-box of the stove, as herein described, and for the purpose set forth.

JAMES L. WILLSON.

Witnesses:

SAL N. WILLSON,  
JULIAN KUNE.