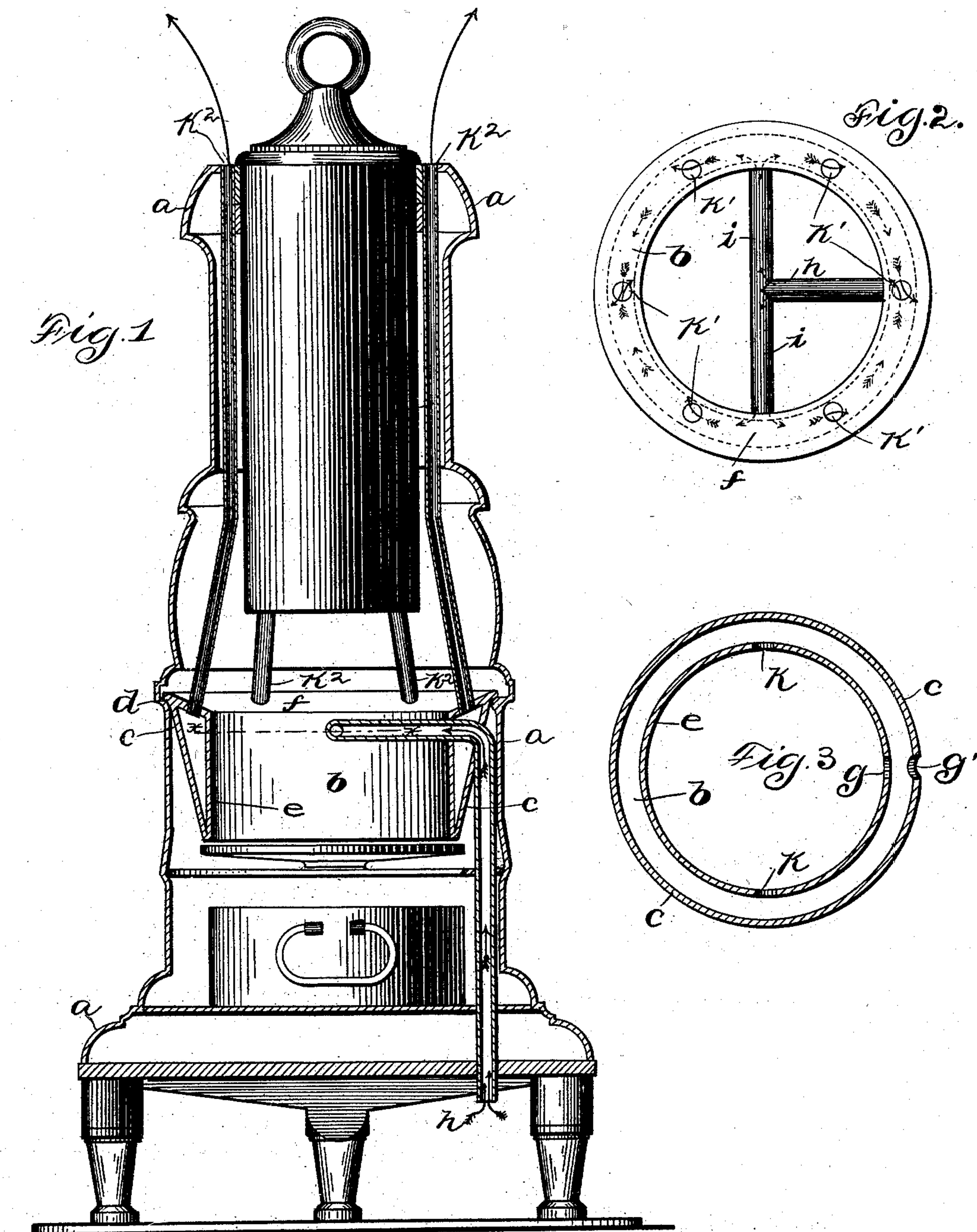


(No Model.)

T. N. HALLANGER.
STOVE.

No. 505,463.

Patented Sept. 26, 1893.



Witnesses:
George L. Bragg.
W. Clyde Jones.

Inventor:
Tobias N. Hallanger,
By Barton & Brown,
Attorneys.

UNITED STATES PATENT OFFICE.

TOBIAS N. HALLANGER, OF CHICAGO, ILLINOIS.

STOVE.

SPECIFICATION forming part of Letters Patent No. 505,463, dated September 26, 1893.

Application filed February 21, 1893. Serial No. 463,256. (No model.)

To all whom it may concern:

Be it known that I, TOBIAS N. HALLANGER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Stoves, (Case No. 3,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to stoves.

It has for its objects to dispense with the lining of fire clay or fire brick within the fire box, and means for causing the major portion of the air heated by the stove to freely circulate in the room, and other advantages as hereinafter set forth.

Generally speaking the principal feature of the stove of my invention consists of a fire box constructed with two walls which inclose an air space to which communication may be had with the exterior by means of a series of tubes extending upward from the fire box, which tubes are designed to afford passage for the heated air, and to which inclosed air space a pipe is led to give a constant supply of fresh air to take the place of the air that has been rarified by heat and expelled through the above mentioned tubes.

My invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a partial vertical section of a stove in accordance with my invention. Fig. 2 is a top view of my improved form of fire box. Fig. 3 is a longitudinal cross section of the fire box on line $x-x$ of Fig. 1.

Like parts are referred to by similar letters in the three figures.

The outer casing a of the stove may be of any suitable configuration and is made preferably of cast iron.

In the drawings I have shown a parlor stove. The shape of the stove, however, to which my invention may be applied, is not essential.

Within the casing a is placed a fire box b in the usual location. This fire box is preferably made to conform in contour to the inclosing casing, and is of the best approved form given base burning drum feeding stoves. The outer wall c of this fire box flares toward

the top and terminates preferably in a lip d , whereby it may readily be suspended within the casing a . The outer wall c is preferably made to approach the inner wall e with which it is concentric, so that the two walls will converge at the bottom of the fire box, and diverge at the top thereof where the two walls are bridged by a rim f . The fire box is preferably made in one casting to make the space inclosed by the walls c and e and rim f perfectly air tight. Two concentric orifices $g g'$ are tapped in the walls c and e to permit of the insertion of a tube h which is provided with tubular branches $i i$ which communicate with the air space between the walls and rim of fire box b through orifices $k k$. I prefer the method of introducing the fresh supply of atmosphere to this air space through the tubular branches $i i$ of the supply tube h , rather than from tube h directly, because the air is more evenly distributed over the heating surface and is not likely to find egress before becoming properly heated.

A further advantage in extending the tube h within the fire box and extending branches $i i$ therefrom to the walls of the fire box is the increased heating surface exposed and the consequent more rapid circulation of air.

In Figs. 1 and 2 I have shown diagrammatically by means of arrows the direction of the air currents. When a fire is built within the fire box b the air contained in the space inclosed by its walls and rim becomes heated and expands and finds passage through the distributing tubes $k^2 k^2 k^2$ which extend upward from the fire box to the top of the stove and which communicate with the inclosed air space through orifices $k' k' k'$ in the rim f .

In the ordinary base burning stove I have found it practical to arrange upon the rim of the fire box six distributing tubes $k k k$, but I do not wish to confine myself to this number as less or more may be used without departing from my invention.

In the drawings I have shown an ordinary base burning drum feeding stove. It is obvious, however, that my invention may be applied to stoves of other forms.

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

1. In a stove, the combination with a fire box having double walls, of a cold air supply pipe leading from the base of the stove, a pipe connecting therewith extending across the fire box and opening into the space between the double walls thereof, and an outlet at the top of the stove communicating with the space between the double walls of the fire box, substantially as described.
2. In a stove, the combination of a stove body *a* with a fire box *b* supported therein, said fire box consisting of two walls *c* and *e* and a rim *f*, which inclose an airspace, a tube *h* opening beneath the stove and leading through the fire box and provided with branches *i i* which communicate with the said air space, distributing tubes *k k k* communicating with the exterior atmosphere and the said air space, substantially as and for the purpose specified.
- In witness whereof, I hereunto subscribe my name this 15th day of February, A. D. 1893.
- TOBIAS N. HALLANGER.
- Witnesses:
GEORGE MCMAHON,
GEORGE L. CRAGG.