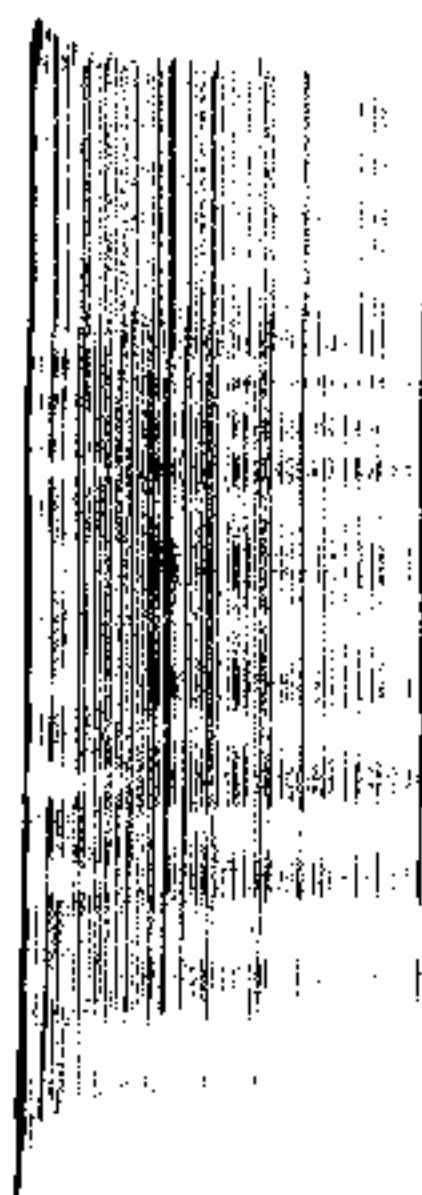


119,554

UNITED STATES PATENT OFFICE.

JOSEPH C. BARNES, OF ALBANY, NEW YORK.

IMPROVEMENT IN HOT-AIR FURNACES.



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IMPROVEMENT IN HOT-AIR FURNACES.

Specification forming part of Letters Patent No. 119,554, dated October 3, 1871.

To all whom it may concern:

Be it known that I, JOSEPH C. BARNES, of Albany, in the county of Albany and State of New York, have invented a new and Improved Heater; 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 drawing forming part of this specification.

This invention relates to improvements in heaters or hot-air furnaces; and it consists in an annular cold-air space surrounding the ash-pit, fire-pot, and combustion-chamber, which is surrounded by another annular space into which the product of combustion is discharged between tubes connecting an upper and a lower section of the cold-air space, and the whole is surrounded by an outer case and comprises an arrangement calculated to be very effective in economizing the heat.

Figure 1 is a sectional elevation, and Fig. 2 is a horizontal section of the same.

Similar letters of reference indicate corresponding parts.

A¹ and A² represent the cold-air annular space surrounding the ash-pit B, fire-pot C, and combustion-chamber D, to which space the cold air is admitted through the bottom when the heater stands on legs, but when it rests on the floor the air may be admitted through an opening in the

side, and the part of said chamber around the ash-pit may be dispensed with. E is the annular space surrounding A¹ and A², into which the product of combustion is discharged between the tubes F, introduced between the sections A¹ and A² about at the top of the fire-pot, and from which it escapes either at the top through G or at the bottom through H. I is the outer case surrounding the whole, and confining the heated air for causing it to pass into the conductors.

It will be seen that this arrangement provides a very large air-heating surface; also, that the cold air is exposed to very great heat when passing through the tubes F, which are exposed to intense heat immediately above the fire-pot.

For use as an ordinary stove the outer case will be dispensed with.

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

The cold-air chamber in sections A¹ and A², connected by the tubes F surrounding the fire-pot and chamber D, and either surrounding the ash-pit or not, and the said chamber surrounded by the chamber E, and the whole by an outer case, I, or not, all substantially as specified.

The above specification of my invention signed by me this 5th day of April, 1871.

JOSEPH C. BARNES.

Witnesses:

CHAS. MCGARVEY,
JOHN JOSEPH COYLE.