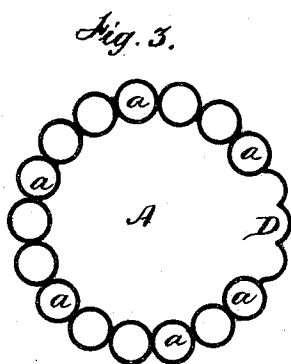
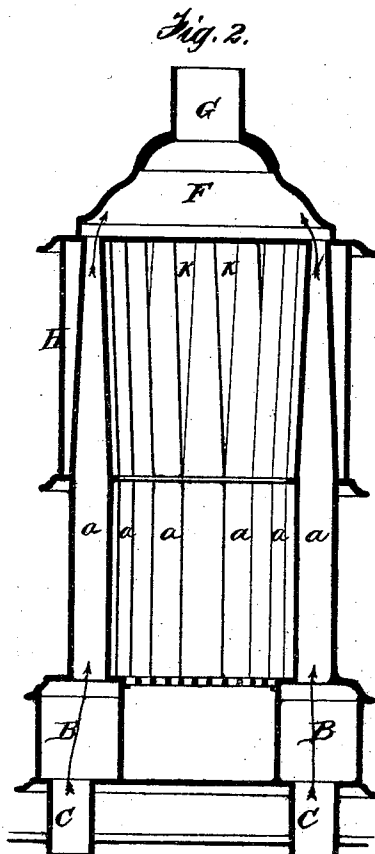
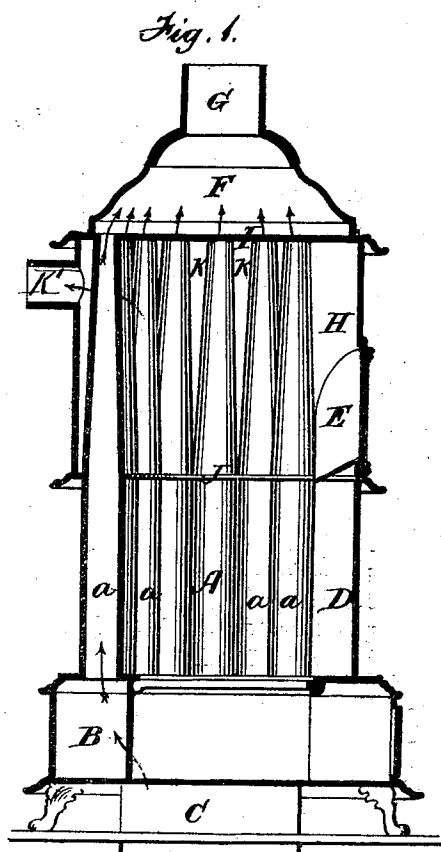


U. E. CROFUT, T. J. CHASE, & H. D. TIFFANY.
Stoves.

No. 148,419.

Patented March 10, 1874.



WITNESSES

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UNITED STATES PATENT OFFICE.

ULYSSES E. CROFUT, THOMAS J. CHASE, AND HUMPHREY D. TIFFANY, OF
NICHOLSON, PENNSYLVANIA.

IMPROVEMENT IN STOVES.

Specification forming part of Letters Patent No. **148,419**, dated March 10, 1874; application filed
January 24, 1874.

To all whom it may concern:

Be it known that we, U. E. CROFUT, T. J. CHASE, and H. D. TIFFANY, of Nicholson, in the county of Wyoming and State of Pennsylvania, have invented certain new and useful Improvements in Stoves; and we do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figures 1 and 2 are vertical sections taken on lines at right angles with each other; and Fig. 3 is a horizontal section, showing the construction of the fire-pot.

Similar letters of reference in the accompanying drawings denote the same parts.

This invention relates to that class of heaters in which cold air is taken from beneath the stove and carried upward around it, said air being heated in its upward passage by contact with the stove, and conveyed by suitable means to other apartments. To this end our invention consists in constructing the walls of the fire-pot of vertical tubes, made tapering near their upper ends, and communicating at their lower ends with a cold-air chamber at the bottom of the stove, and at their upper ends with a hot-air chamber, said air-chambers being provided with suitable connections for admitting air from the bottom, and conveying it away from the top after it has been heated by its passage through the tubes of the fire-pot.

In the drawings, A represents the fire-pot, composed of a circular row of vertical tubes, *a*, placed in close contact with each other, and being of uniform size for a portion of their length, and from thence tapering to the upper end, as shown. The tubes *a* do not extend entirely around the fire-pot, a space, D, being left at the front of the stove, this space being filled by a piece of corrugated iron. E represents the feeding-door. B represents a cold-

air-chamber, at the bottom of the stove, surrounding the ash-pit, and provided with vertical flues or passages C, the latter extending downward through the floor of the apartment in which the stove is contained. F represents the hot-air chamber, located at the top of the stove, and communicating with the cold-air chamber through the vertical tubes *a*. It will be seen that cold air passing into the chamber B, through the flues C, is caused to flow upward through the tubes *a*, around the fire-pot, and will naturally become heated in such passage, the tubes *a* being in close contact with the fire, and offering a large extent of heating-surface to the air passing through. The heated air accumulating in the hot-air chamber F is conducted through a suitable flue, G, to other apartments. The tapering portions of the tubes *a* are enclosed in a drum, H, which is separated from the hot-air chamber F by a horizontal partition, I. A rim or flange, J, projects inward from the lower end of the drum H, said rim inclosing the tubes *a*. The tubes *a* are in close contact with each other, and of uniform size below the rim J, this portion constituting the magazine or fire-pot proper. Should this arrangement be continued the entire length of the tubes, it would be necessary to introduce a smoke-pipe through one or more of them. By giving them a tapering form, however, above the rim J, wedge-shaped spaces K are created, through which spaces the products of combustion escape and pass out through an ordinary smoke pipe, K'. The tapering construction of the cold-air flues *a* also allows the products of combustion to pass between the outer cylinder of the stove and the air-pipes through the wedge-shaped spaces K K, thus thoroughly heating the air in the tubes *a*. And a further advantage of the tapering form of the upper part of the air-pipes is gained, as the passage of the air is retarded by contracting or tapering the tubes,

thereby allowing the air to become more highly heated than in the ordinary construction, by being longer acted upon by the products of combustion.

We claim as our invention—

The combination of the cold-air chamber B, having cold-air flues C C and vertical tubes *a a* in close contact, near their lower ends, to form the fire-pot A, said tubes *a a* being made tapering at their upper ends to retard the passage of the air in them, and afford wedge-shaped openings K K for the passage of the products of combustion, hot-air chamber F, and drum H, the whole being arranged, con-

structed, and operating in the manner and for the purpose set forth.

U. E. CROFUT.
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