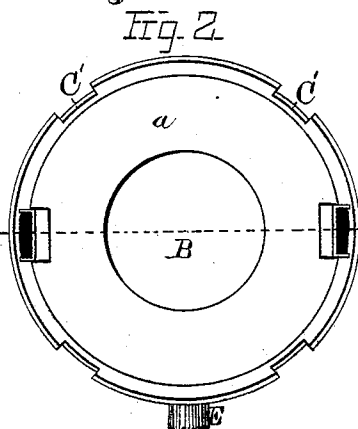
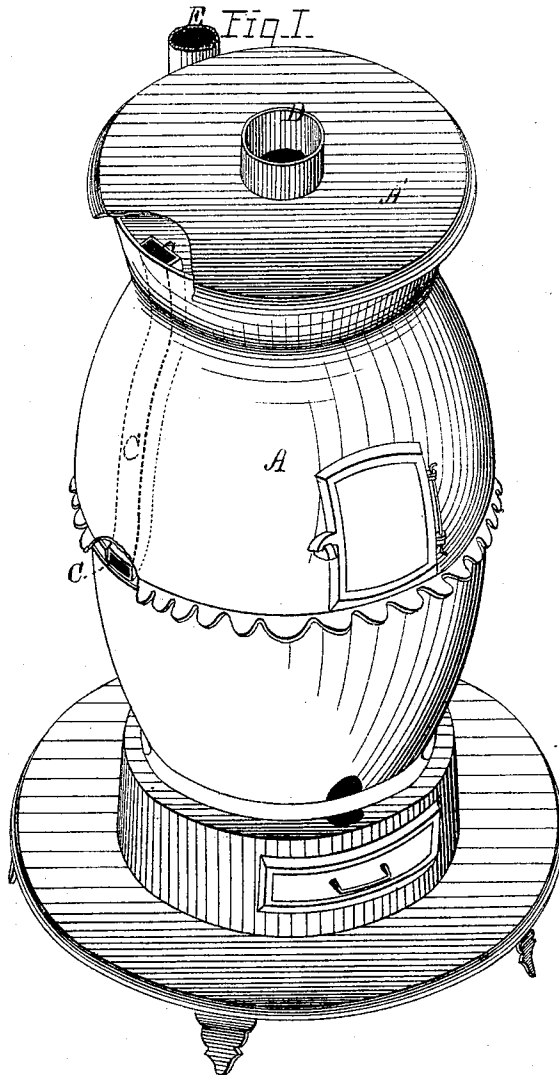


E. P. HILDEBRAND.
Stoves.

No. 151,589.

Patented June 2, 1874.



WITNESSES=

Jas. E. Hutchinson,
 John R. Young

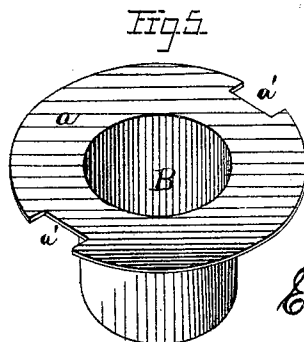
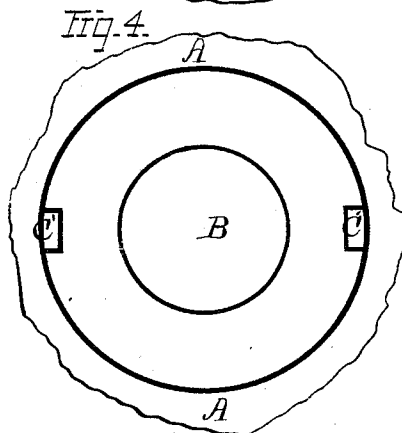
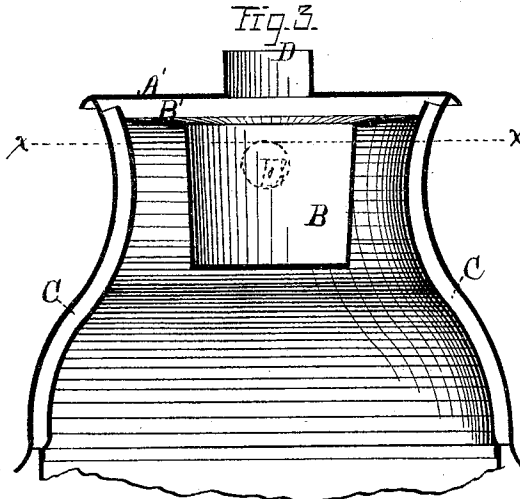
INVENTOR.

E. P. Hildebrand, by
 Orindle and Beane, his
 Attorneys

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UNITED STATES PATENT OFFICE.

EDWARD P. HILDEBRAND, OF INDIANA, PENNSYLVANIA.

IMPROVEMENT IN STOVES.

Specification forming part of Letters Patent No. **151,589**, dated June 2, 1874; application filed March 2, 1874.

To all whom it may concern:

Be it known that I, EDWARD P. HILDEBRAND, of Indiana, Indiana county, and State of Pennsylvania, have invented certain new and useful Improvements in Coal-Stoves; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a perspective view of the stove embodying my invention. Fig. 2 is a plan view of said stove with its top plate removed. Fig. 3 is a vertical central section of the upper portion of the stove on line *y y* of Fig. 2. Fig. 4 is a horizontal section on line *z z* of Fig. 3; and Fig. 5 is a perspective view of the removable portion of the heat-reservoir.

Letters of like name and kind refer to like parts in each of the figures.

This invention relates to stoves which are designed to heat not only the apartment in which they are placed; but also to afford a supply of heated air to adjoining or upper rooms; and it consists in a heating-stove having in the upper part of its chamber of combustion an air chamber or space communicating freely with the external air and with pipes leading to adjacent rooms, substantially in the manner and for the purposes hereinafter more fully and specifically described.

In the annexed drawings, A represents the stove, which may be of any usual or ordinary form or construction for heating-stoves. B is a hot-air space or chamber located in the top or upper part of the stove immediately in the chamber of combustion, and as nearly as possible directly over the point of greatest heat in the said chamber. By its peculiar shape it is allowed to depend centrally into said chamber, and thus the heat and products of combustion are caused to circulate about and around its outer surface and completely envelope its sides and bottom. Said chamber or space is closed on all sides excepting the top. At this point it opens into the widened space B', which, in fact, constitutes a part and portion of the same. From this upper space it communicates, by means of pipes C, with the

external air, and by means of pipes D with adjacent apartments, or upper rooms or places to which it is desired to convey a portion of heated air. The pipes C are preferably cast with the upper section of the stove, or they may be made of cast-iron and secured thereto, or constructed in any well-known and workmanlike manner, the intent and aim of them being to provide a suitable and efficient means by which fresh air may be taken from the apartment in which the stove stands, or otherwise, as taste or convenience may suggest, and supplied to the air space or chamber B.B' in sufficient volume to give a suitable circulation therein and therefrom, and to render the air heated therein wholesome.

By the special details of construction I have thus shown and indicated I am enabled to gain a considerable store of heat in a small reservoir. This end is attained by placing the said air-induct pipes and said hot-air chamber within the chamber of combustion, and so exposed to the greatest force of the heat evolved when the stove is in operation, and by the efficient means I have devised for leading off the heat to the adjoining apartments. The incoming air by this means is brought so closely and intimately into contact with the intensely-heated surfaces of said pipes and chambers that it is very quickly heated. I have not found, in my experience, that there is any need, under ordinary and usual circumstances, for delaying or detaining said draft or making it circuitous in its passage through said pipes and chamber, in order to have it become thoroughly or sufficiently heated for all practical purposes the said device may be put to.

In constructing the present stove, to show my invention, the top A' is made removable. It can be fixed or secured in place in any usual manner. Centrally or otherwise is placed the thimble for the hot-air-exit pipe D. There may be several of such pipes, if desired. The chamber or space B is formed or made of metal, ordinarily in shape of an inverted hat, as shown in Fig. 5. The flange or rim *a* of this hat-shaped device, resting upon suitable supports, pins, projections, or a ledge affixed in or cast upon the inside of the upper part of the stove,

forms the widened space B' of chamber B between it and the top plate of the stove, suitable notches being cut away, as at *a'*, to allow the free entrance of pipes C into said space or chamber B B'.

In addition to the means afforded by pipes C for admitting air to said hot-air space or chamber, I may provide apertures or induct-openings at C', in the upper edge or part of the stove, thus affording direct communication between the said chamber and the outside of the stove. The exit-pipe for the products of combustion is shown at E.

As thus made and constructed, this device has been found very efficient in accomplishing the ends for which it is designed. When made in a proper manner, the stove embodying this invention can be afforded for sale at but very small advance in cost over the ordinary heating-stove; and it can be repaired or the parts

renewed at a small expense and very little trouble.

As I have now designed it, the stove, in its exterior appearance, differs in no essential particular, from the ordinary coal heating-stove.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

A heating-stove, having in the top or upper part a hot-air chamber, B B', its lower part depending into the stove and exposed on its bottom and sides to the heat and products of combustion, and communicating with the external atmosphere by means of pipes C passing through the upper portion of the stove and apertures C' in said body, substantially in the manner and for the purposes set forth.

E. P. HILDEBRAND.

J. H. YOUNG,
R. A. YOUNG.